

THE MILLING WORLD

AND

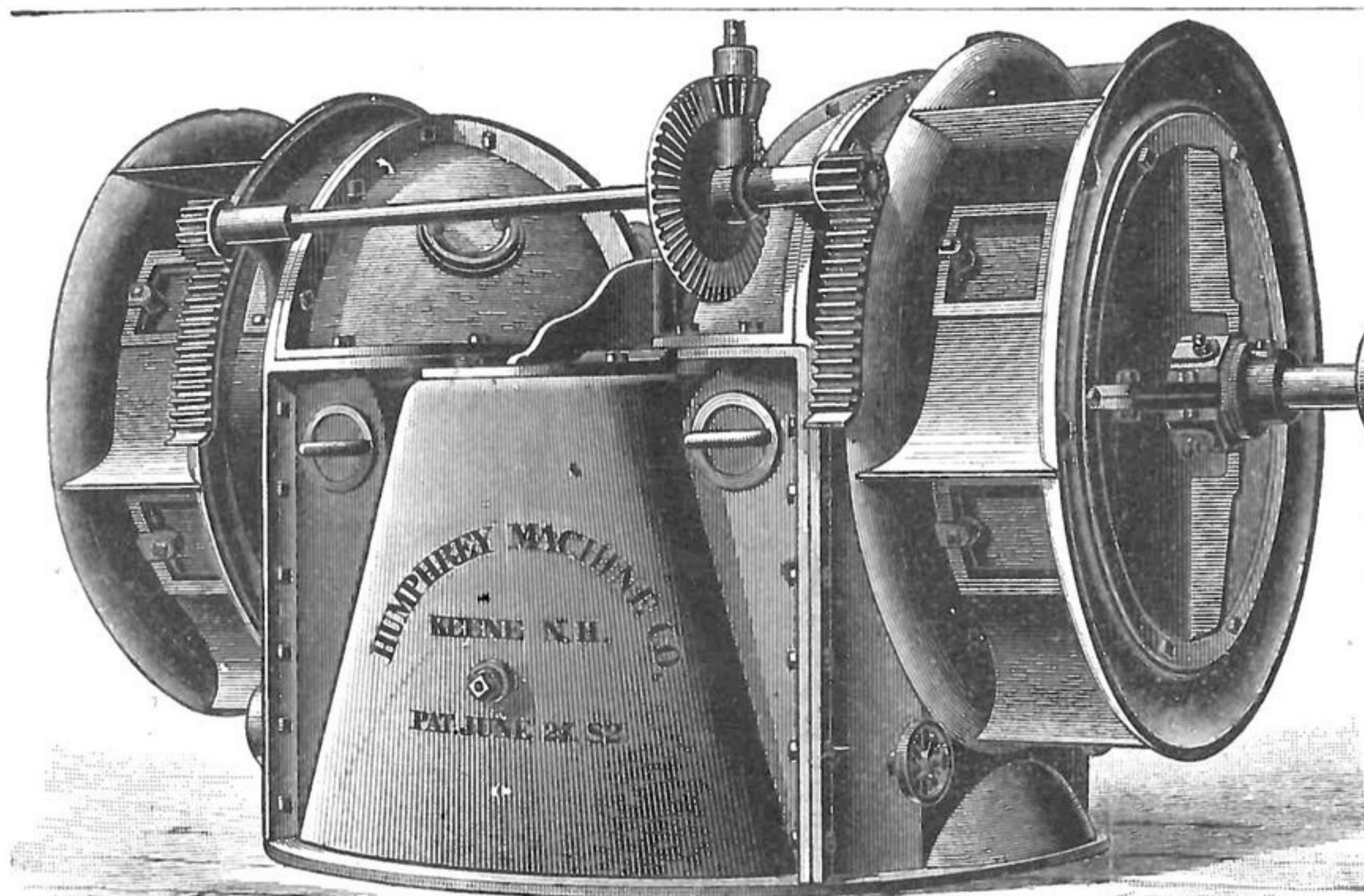
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXIII. No. 17.

BUFFALO, N. Y., DECEMBER 22, 1890

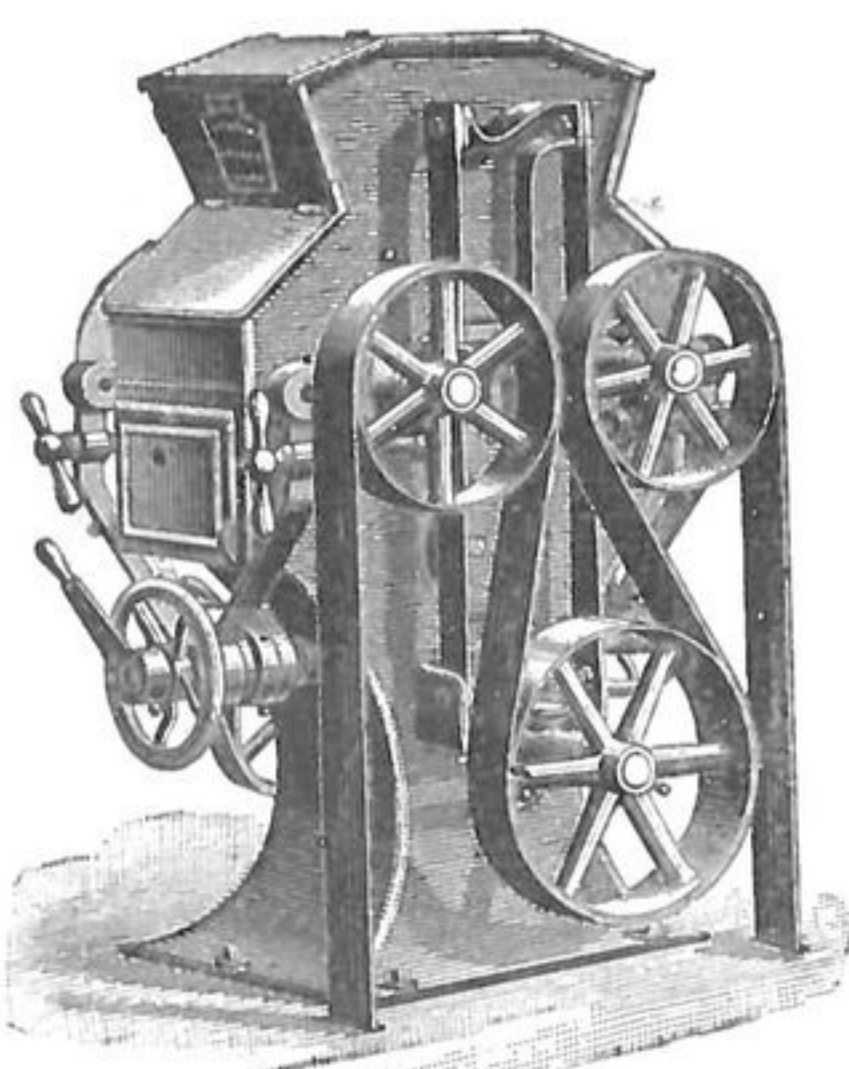
\$1.50 PER YEAR.



THE X-L-G-R OR IMPROVED CIRCUMSHOT Water Wheel

On Horizontal Shaft. Saves cost, annoyance and loss of power incident to use of gears. Affords more available power from water applied at full or part gate than any other. The cheapest, best and most desirable Water Wheel yet produced.

EFFICIENCY, ECONOMY and EXCELLENCE FULLY GUARANTEED.
Humphrey Machine Co
KEENE, - - N. H.



'Keystone' 4-Roller Wheat Mill.

FLOUR MILLS. CORN MILLS. HOMINY MILLS.

THE BEST MILL THAT HAS EVER BEEN BUILT IN GREENE COUNTY, PA.

THE J. B. ALLFREE CO.

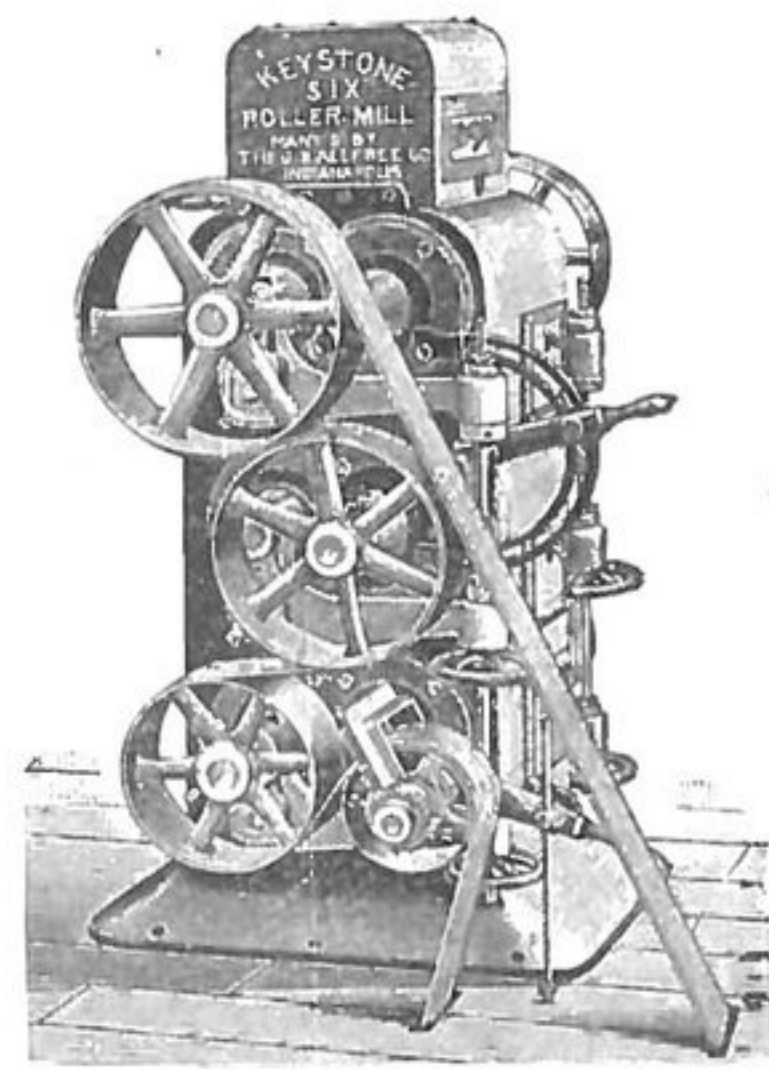
GENTLEMEN: After running my 25-bbl. mill over one month I feel it my duty, and in justice to you, to state that I am more than pleased with the mill you built for me; it started like a clock from the word "go." Before making my contract I made careful inspection of the different systems and machinery in the best mills, and now feel that I have made no mistake in awarding you the contract. I am well satisfied that your guarantees have been more than fulfilled as regards percentages, yield and capacity. I undoubtedly have the best mill that has ever been built in Greene County, Pa., which, together with the superior quality of wheat, enables us to turn out grades of flour that are unequalled, and reports which I have received from expert bakers fully substantiate this statement. My clean-up is equal to any 25-bbl. mill in the State. I will say that "The J. B. Allfree Rolls and Flour Dressers" can not be beaten in the world for light running and ease of access to all their parts. I would advise any miller building a new mill or remodeling an old one, to place their contract with The J. B. Allfree Co. Thanking you for the prompt and efficient manner in which you built my mill, and wishing you continued success, I remain,

WHITELEY, PA., AUG. 27, 1890.

ANDREW LANTZ.

SEND FOR CIRCULAR OF OUR 6-ROLLER CORN AND FEED MILL.

THE BEST IN THE WORLD TO-DAY.



'Keystone' 6-Roller Corn & Feed Mill.

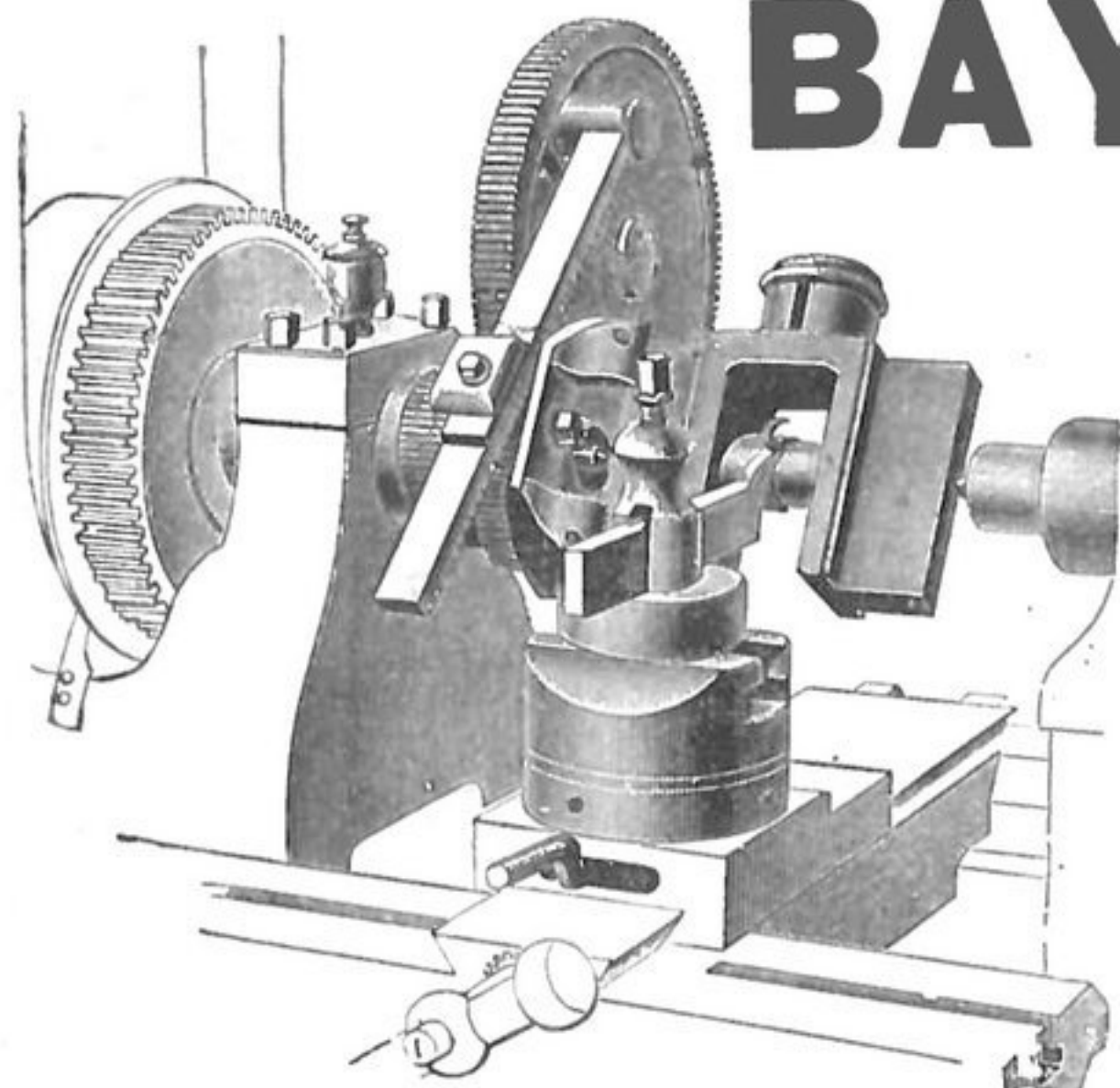
ADDRESS THE J. B. ALLFREE CO., 76 to 86 Shelby Street, INDIANAPOLIS, IND.

BAY STATE IRON WORKS

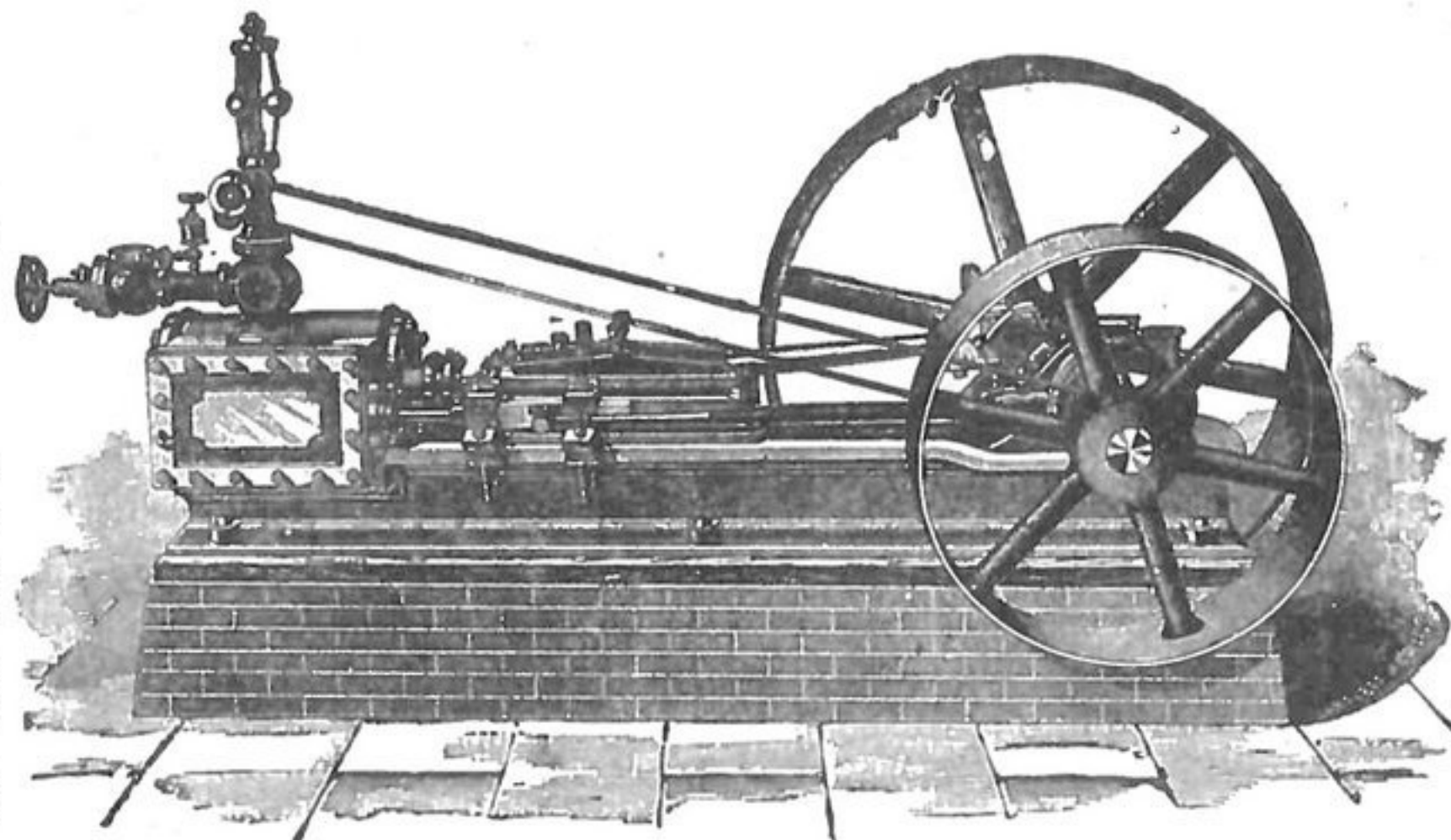
—Manufacturers of—

Engines, Boilers, —AND— HOISTING MACHINES.

Also the Patent Cross-Head Machine and Acme Cube Pipe Tongs. We make either Center or Side Crank Engines, on same bed. Make engines from 5 to 250 Horse-Power. Have over 3,500 Engines and Boilers and over 1,000 Hoisting Machines in use, and all giving good satisfaction. Send for Catalogues and Prices.



PATENT CROSS-HEAD MACHINE.



IMPROVED DETACHABLE CENTER-CRANK ENGINE.

Noble & Hall, Box 462, Erie, Pa.

OFFICE OF CASE MANUFACTURING COMP'Y COLUMBUS, OHIO.

The Case Roller Mills. Over 14,000 Pairs in Use.

PLEASE READ OUR DESCRIPTION OF THEM, EVERY STATEMENT OF WHICH IS ABSOLUTELY TRUE.

PLEASE READ WHAT MILL OWNERS SAY ABOUT THEM.



The accompanying cut is a correct illustration of our latest improved Four Roller Mill. For fine work, great durability, simplicity, and general excellence, they stand "head and shoulders" above all others.

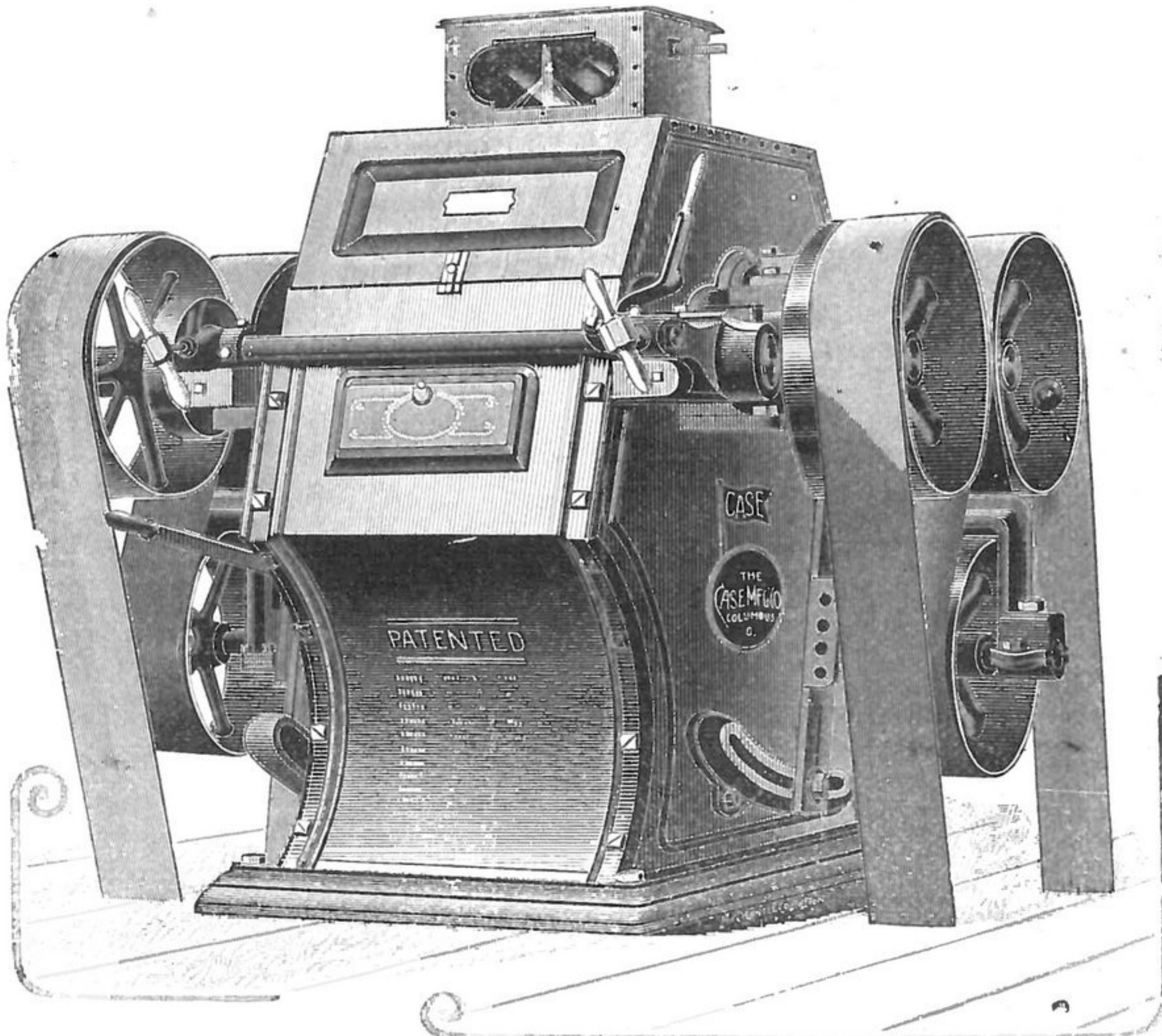
The frame is of iron with a heavy iron base.

The wood-work in top is of select cherry and black walnut, carefully shellacked and varnished.

The handles of adjusting screws and levers are finely nickel plated.

The joints are tight and dustless.

The adjustments easy, simple and perfect.



The roll bearings are wide and finely babbitted.

The belt drive is positive—no little short belts to slip.

The door for examining stock is a great convenience.

The arrangement for leveling rolls, simple and accurate.

The rolls can be thrown apart their entire length by one movement of the lever, and brought back again to original position requiring no re-setting or experimenting.

Each machine is provided with our AUTOMATIC VIBRATING FEED, which requires no attention, and never fails to spread the feed the entire length of the rolls.



LISTEN! MICHIGAN MILLERS TALKING NOW.

CHARLOTTE, MICH., AUG. 5, 1890.

MESSRS. CASE MFG. CO., COLUMBUS, O.

Gentlemen: The mill is running fine. We are enjoying quite a fine little trade. Already have put over twenty tons of flour on the market here since we started the 7th of July, and it is giving elegant satisfaction. Every one who has seen our outfit pronounces it A 1, and the Case Automatic Feed can't be beat. In fact the Rolls are models of perfection. We are making a close finish and placing our goods alongside of the long system mills, carrying off the cake. We are highly pleased with the millwright work, and find your Messrs. McKenie and Shough congenial gentlemen to do business with.

Very truly yours, PERKINS & MOON.



VOL. XXIII. No. 17.

BUFFALO, N. Y., DECEMBER 22, 1890.

\$1.50 PER YEAR.

BRITISH millers are finding fault with the Roumanian and South Russian wheats of this crop. Early samples were said to be very fine, but the bulk of the grain is decidedly inferior in quality.

The astounding announcement comes from Milwaukee that Secretary Barry, of the Millers' National Association "says that over 200 millers will go on the excursion to Europe that is to follow the next annual meeting of the association. They will visit the principal European flour markets, and will combine business with pleasure." Well! "Over 200 millers" is quite a number, to be sure, to go 3,000 or 4,000 miles and cross an ocean to attend a meeting in Europe, when even Minneapolis could not attract half that number in 1890! Is Secretary Barry correctly reported in the matter? Possibly not.

THE Argentine Republic wheat bugaboo is petering out. The financial condition of that country has gone from bad to worse, and every interest is suffering. Even immigration has given place to emigration. The Buenos Ayres "Standard" says: "We need not talk of immigration. The human balance is decidedly against the country; for every man that arrives two depart." The boom has collapsed, utterly and hopelessly. The wheat area in the Argentine Republic will not increase in the degree hoped and predicted in Europe. In their haste to get wealthy the Argentinians have borrowed amassed wealth where they should have created wealth. The result is a hopeless, overpowering indebtedness, that kills all business. Again, they have "encouraged immigration," forgetting that only the least desirable of European laborers could be "encouraged" by a free ocean passage and the virtual gift of farms. Every move was made with a flourish of trumpets, and now the trumpets are wailing a dirge over the failure of all the projects that were to be carried out by utterly ignoring the laws of commerce and common-sense. For the present, and probably for many years to come, the Argentine Republic is out of the field as "a formidable competitor of the United States in wheat growing and exportation."

BREADSTUFF exportations during November showed a large falling off. Barley exports during the month amounted to \$19,689, against \$116,469 last year; corn \$754,009, against \$1,996,879; corn-meal \$78,945, against \$91,923; oats \$18,360, against \$37,985; oatmeal \$17,289, against \$37,241; rye grain \$23,100, against \$34,989, showing a loss all along the minor lines. The wheat grain export for the month were 3,399,422 bushels, worth \$2,894,544, against 4,218,134 bushels, worth \$3,460,122 in the same month last year. For the five months ended November 30th the wheat grain exports footed 18,203,504 bushels, worth \$16,230,683, against 22,269,288 bushels, worth \$18,671,031, last year in the same months. The November wheat flour exports were 792,080 barrels, worth \$3,876,068, against 918,590 barrels, worth \$4,217,822 in November last year. For the five months ended November 30th the wheat flour exports were 3,957,407 barrels, worth \$18,881,485, against 4,704,534 barrels, worth \$22,321,148, last year

in the same months. Every article on the list showed a decidedly large decrease in November. The total breadstuff exportation in November was \$7,682,004, against \$10,053,430 last year. For the five months ended November 30th the total was \$44,679,477, against \$54,582,024 for the same months last year. For the first 11 months of 1890 the total is \$126,719,160, against \$111,811,733 for the same months in 1889. Reckoning $4\frac{1}{2}$ bushels of wheat to the barrel of flour, the wheat grain and flour exported from the United States during the first five months of this fiscal year equal only 36,011,836 bushels, against 43,439,691 bushels in the same months in 1889. The outlook favored larger wheat exportations during the balance of the year, but recently Russia has disappointed expectations by doubling her export rate. Should Russian and Indian exports be maintained at their present notch a month or two longer, the incoming Southern Hemisphere crops will reach the markets in time to prevent a demand for the United States surplus at the present high level of prices.

ASIA Minor is said to possess 155,000,000 acres of land suitable for the growth of fine wheat. At an average of one bushel to the acre that area would produce a crop of 155,000,000 bushels of wheat, at two bushels a crop of 310,000,000, at three bushels a crop of 465,000,000, equal to the average yearly output of the United States, at four bushels 620,000,000, at five bushels 775,000,000, at six bushels 930,000,000, at seven bushels 1,085,000,000, at eight bushels 1,240,000,000, at nine bushels 1,395,000,000, at ten bushels 1,550,000,000, and at only fourteen bushels to the acre the crop of Asia Minor would be 2,170,000,000 bushels, or more than the present yearly crop of the wheat-producing world! Evidently, all the preceding wheat bugaboos, those of India, Russia, the Argentine Republic, Canada and Australia, have been mere microbes, bacilli, infinitesimal entities, in comparison with this Asia Minor bugaboo. Each of the others was destined to wipe out only the United States, while this one is to wipe out all the rest of the world sown to wheat! As the London "Miller" points out, wheat is already cheap enough for the British farmer, and the rule of the Turkish Sultan makes the development of Asia Minor simply impossible. Why not locate the next bugaboo on the planet Mars? The cunctipotent hebetudinosity of these wheat bugaboos is becoming monotonous in the extreme. What the American wheat-growers really need is a bugaboo that bugaboos. Apply at once. They are still in business at the old stand, "rassling" with Hessian-flies, frost, rain, drouth, wind, smut, chinch-bugs, bulls, bears and other uncomfortable environments and appurtenances. The Asia Minor land is said to be "exceedingly fertile," and that would mean an average yield of at least thirty bushels to the acre, or a potential yield of 4,650,000,000 bushels of wheat yearly, in which event the wheat-growers of the rest of the world would be compelled to quit wheat growing and take to sawing wood. In view of these figures, the civilized wheat-growers of the world will unite in wishing long life to the Sultan whose infamous and barbarous sway over Asia Minor keeps her 155,000,000 acres of exceedingly fertile wheat land sown to Kurds and other piratical savages.

The DAWSON ROLL WORKS CO.

FOUNDERS & MACHINISTS,

—MANUFACTURERS OF THE—

Dawson Roller Mills

—AND FURNISHERS OF—

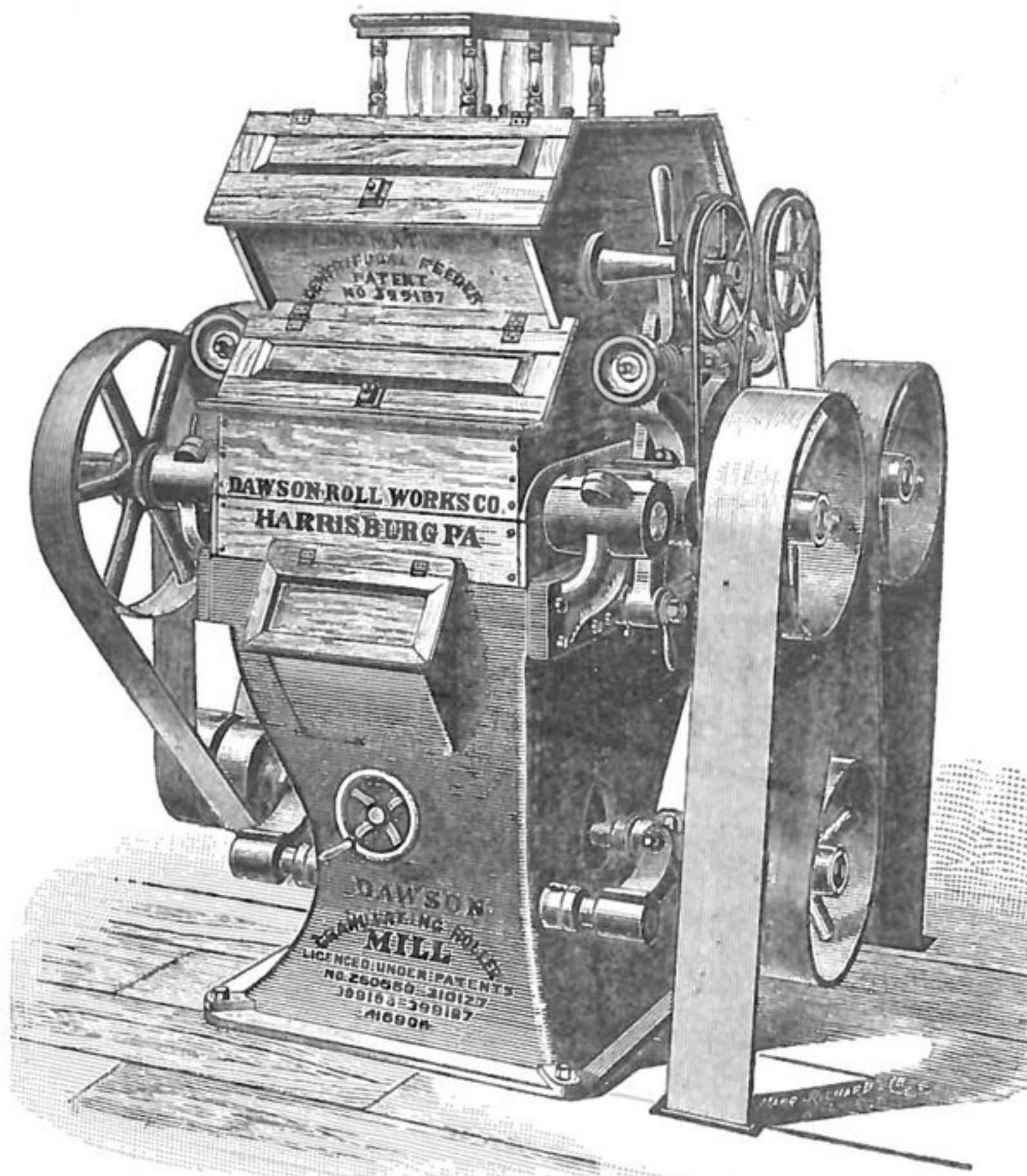
CHILLED IRON ROLLS

WITH DAWSON PATENT CORRUGATION.

ALL STYLES OF FLOUR MILL ROLLS RE-GROUND AND
RE-CORRUGATED WITH ANY FORM OF CORRUGATION.

We have had large and extended experience in grinding and corrugating chilled rolls for milling, and have one of the largest and most improved plants in the country for this work, which enables us to meet the most exacting requirements of the trade promptly.

ORDERS AND CORRESPONDENCE SOLICITED.



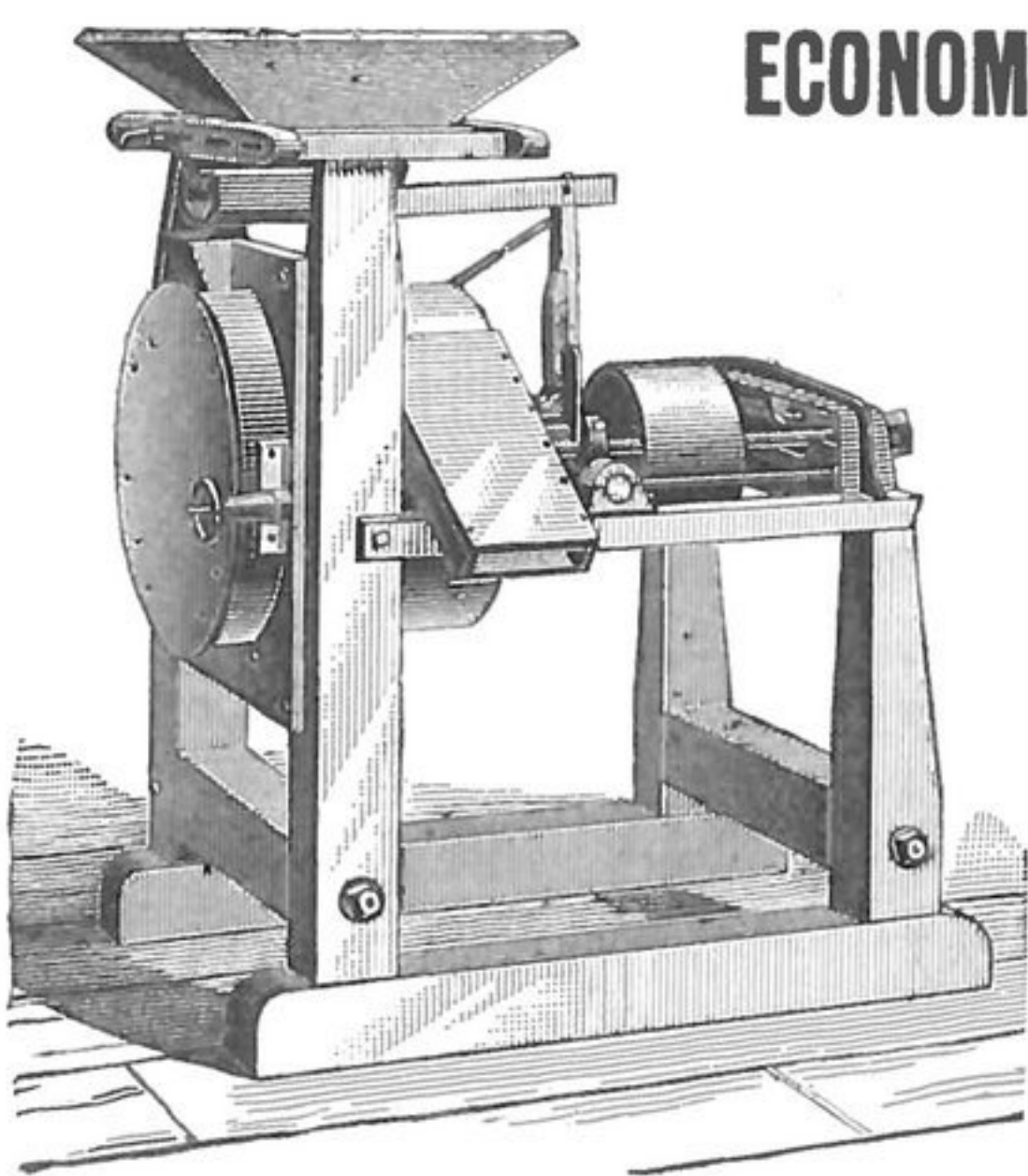
DAWSON ROLL WORKS CO.

South and Short Streets,

HARRISBURG, PA.

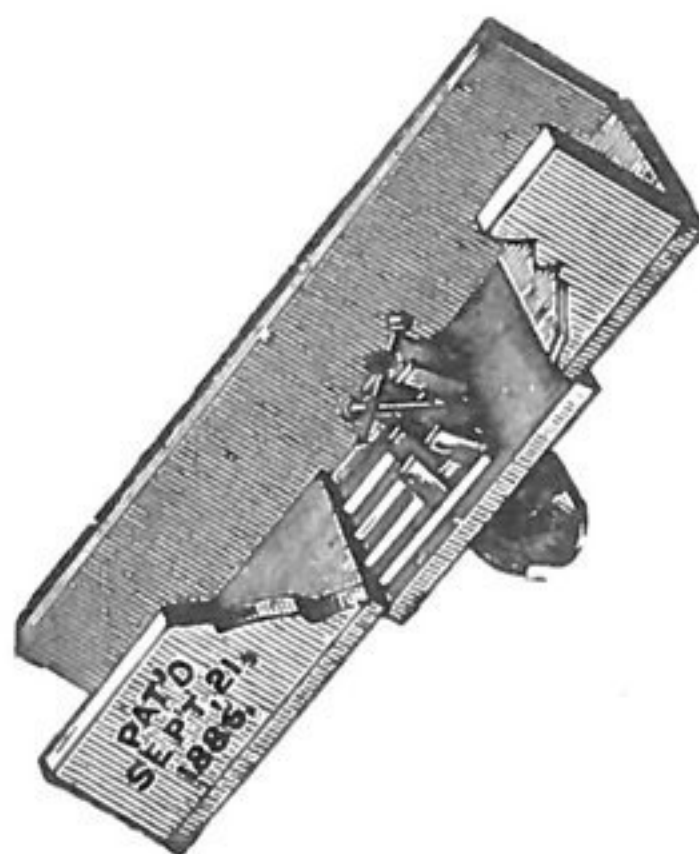
BARTLETT'S VERTICAL MILL

CLEVELAND, Oct. 3, 1890.
DEAR SIR:—We have now been using your 18 inch Vertical Mill for several months. It took the place of a 30-inch under-runner. We can grind nearly twice as much grain of all kinds, including clear oats, as we ever could with the 30-inch Mill and with considerable less power. We gladly recommend the mill. Yours truly, SHEETS BROTHERS.



ECONOMIC MAGNETIC SEPARATOR.

Every Miller Should
Give One a
Trial.



Durable. Cheap. \$7.00 Thirty Days' Trial.

C. O. BARTLETT, - CLEVELAND, OHIO.

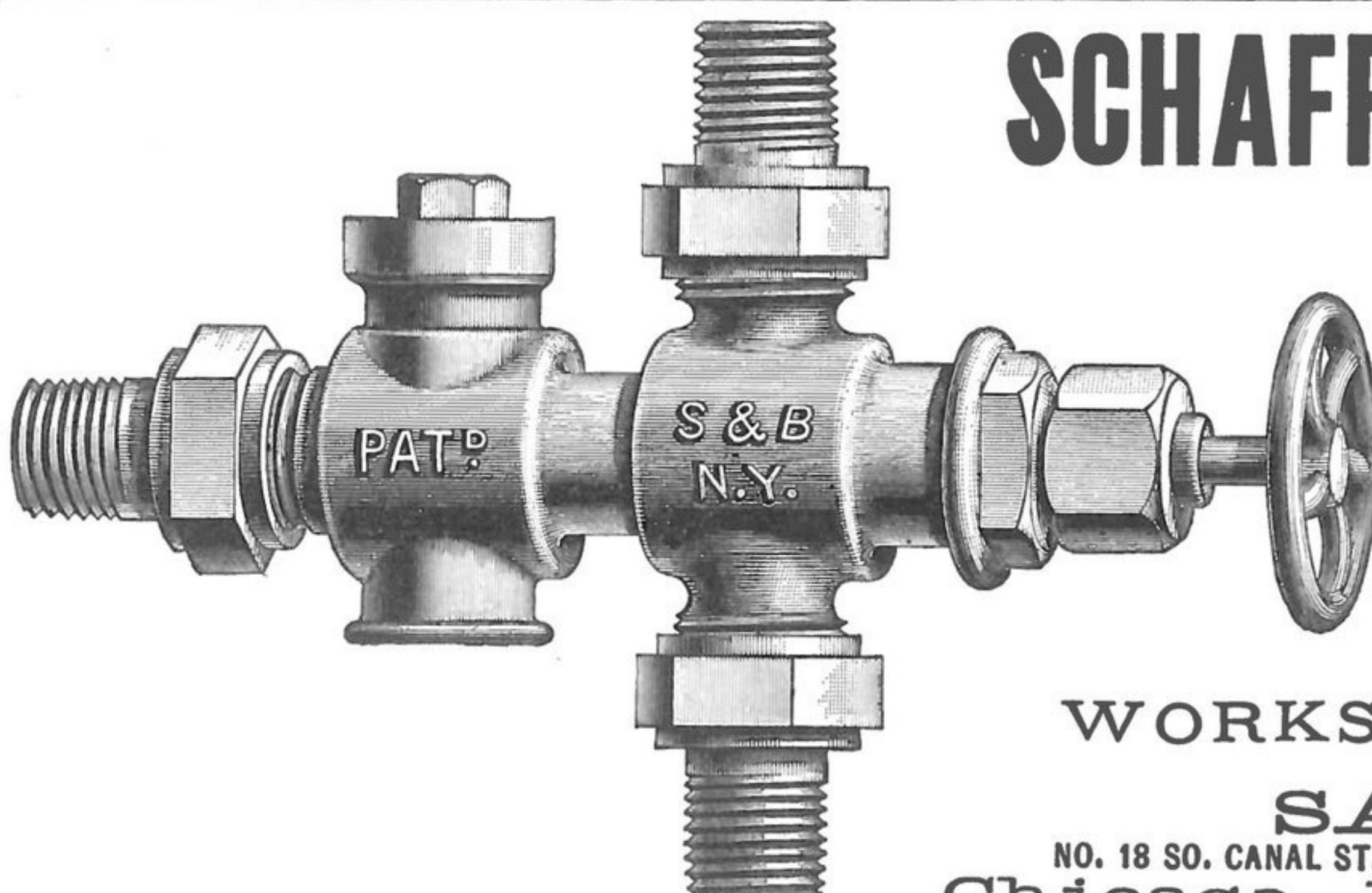
The Grand Hotel

LOCKPORT, NEW YORK.

Remodeled last year. Refurnished entirely with new and elegant furniture. Fitted with all modern improvements, including Electric Lights, Steam Heat, Call Bells, Elevator, Etc.

FREE BUS TO ALL DAY TRAINS.

W. C. COMSTOCK, PROP.



SCHAFFER & BUDENBERG,

—MANUFACTURERS OF—

Pressure Gauges for all Purposes

ENGINE COUNTERS AND REGISTERS.

IMPROVED RESTARTING INJECTORS

AND EXHAUST STEAM INJECTORS.

PYROMETER AND THERMOMETER, STEAM TRAPS, REDUCING VALVES, AND ENGINE AND BOILER APPLIANCES IN GENERAL.

WORKS AT BROOKLYN, N. Y.

SALESROOMS:

NO. 18 SO. CANAL ST.,
Chicago, Ill.

NO. 40 JOHN STREET,
New York.

When Writing to Advertisers Please Mention 'The Milling World.'



PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Buffalo, N. Y.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS MC FAUL, JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in unregistered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for sale or to rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD, BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office 10 cents must be added to pay postage.

WANTED, TO RENT.

A good Custom Mill, in a good grain section. Steam or water power. Address, MILLER, P. O. Box 170, Pocomoke City, Worcester County, Md. 252

FOR SALE AT A BARGAIN.

I have a half interest in a Short System Roller Mill which I will sell at a bargain. Don't write unless you mean business. Address, GEO. FOSTER, Wakeman, O. 47

FOR SALE.

A water power Grist Mill, in good condition, good location and well established trade. For full particulars address GEO. H. KECK & SON, Sammonsville, Fulton County, N. Y. 16

FOR RENT.

Clinton Mills, at Black Rock, Buffalo, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 811 Main Street, Buffalo, N. Y. 6tf

FOR SALE.

Rare chance, Grist, Saw, Planing Mill, Lumber and Coal Yard, doing good business. Growing village; 15 miles from Washington. Owner wishes to retire. Small capital needed. Terms easy. A. FREEMAN, Vienna, Va. 37

FOR SALE.

A rare opportunity. A No. 1 full Roller Mill on one of the best water-powers in Iowa. Capacity of mill 100 bbls., all in the best of repair and doing a good business on Merchant work. For particulars address owner, S. F. McDONALD, Oxford Mills, Jones County, Iowa. 1619

FOR SALE.

Flour and saw-mill with or without farm of 38 acres. Four buhr mill, with machinery and building in most excellent condition. Buildings on farm good. Good run of custom. Can run by water 9 months, also have steam power. Terms easy. On Big Indian Creek, ¼-mile from Crandall, on Air Line. Mrs. C. KRACKMAN, Crandall, Ind. 36

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
One 20-Inch Portable Mill.
One 18-Inch Double Gear Portable Mill.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

FOR SALE AT A GREAT BARGAIN.

The Reist Roller Mill, at Williamsville, 4½ miles from Buffalo city line. Eighteen acres of land, with dwelling houses, twenty-two feet fall stone dam, Leffel Turbine water wheels, water the year round, steam power to assist in extreme dry seasons. Nine set 9x18 Stevens Rolls, two run of stone, three George T. Smith purifiers, grain-cleaners, scalping and bolting capacity for 80 to 100 barrels per twenty-four hours, etc., etc. Title perfect, bought at Sheriff's sale. Mill was mortgaged for \$18,000; will sell for \$5 500, without regard to loss, as I am no miller, but engaged in other business. The quick buyer will secure a great bargain. Address, WILLIS B. MUSSER, Lancaster, Pa., or my attorneys, BAKER, SCHWARTZ & DAKE, Esqs., Hayen Building, Buffalo, N. Y. 912

FLOUR MILL WANTED.

Flouring-mill wanted at Evart, Osceola Co., Mich. Good wheat region, large territory. Correspondence solicited. GEO. W. MINCHIN, Evart, Osceola Co., Mich. 69

KANSAS CITY, the hustling Missouri town, is anxious to become a milling town. It would seem to possess many advantages, such as central location in a fine wheat country, good railroad facilities for distribution, and abundant supplies of good and cheap fuel. What the town needs is sufficient eloquence to persuade capitalists to utilize its advantages.

MISINFORMED cotemporaries persist in asserting that the Niagara Falls tunnel scheme implies a great change in the aspect of the great cataract. One says that, "while the tunnel does not touch the falls, still it will draw enough water from the river above the fall to lower the water over one inch across the entire fall," adding that "such a change will totally change the appearance of the fall." Those who are familiar with the cataract will smile at the idea of ruining its sublimity by reducing the sheet of water flowing over by even an inch in depth. It may be news to the perspiring writers on Niagara Falls to learn that changes in the depth of the water are very frequent and very considerable. The cataract responds to every change of wind up or down the river, and the depth fluctuates from one inch to two feet or three feet. A wind up the river checks the issue from Lake Erie, thinning down the water-sheet several inches. A wind down the river drives larger quantities of water out of Lake Erie, thickening the water-sheet at the Falls. Those who have walked at one time dry-shod across the bed between Goat and First Sister island, and have at another time seen the Three Sisters and a large part of Goat Island submerged, will understand what fluctuations are possible. At all times the cataract is there, and it will be there right along, despite the tunnel. Enough water could be taken from the Niagara above the cataract to grind all the wheat grown yearly in the world without, in the least, disturbing the sublime physiognomy of Niagara Falls. Even one of the traditionally hardened hackmen at the Falls must smile as he reads about the "desecration" of the cataract.

ACCORDING to late reports, the open fall weather developed the winter-wheat plant very largely, and at the same time the Hessian-fly developed himself quite as largely and rioted in the green crop in a very destructive manner. It is stated that in Illinois, for instance, the area seeded to winter wheat this year is 1,850,000 acres, against 1,705,458 acres last year, but the damage already done to the plant by the Hessian-fly has more than counterbalanced the increase of 144,542 acres in the area sown. If these reports and similar ones from Kansas and other states be correct, the outlook for the winter-wheat yield in 1891 is not at all cheering. The damage done by the Hessian-fly is cureless when it has gone beyond a certain point, and experts are on hand with statements that that point has been passed in many important wheat sections of the winter-wheat States. Ordinarily, these early attacks on the wheat crop are open to suspicion of coloring by the bull speculators, but this time the reports appear to come from bull and bear sources alike, and also from government reports, and there is a singular unanimity in all the reports concerning the Hessian-fly ravages. With the present crop short, with small reserves probable at the beginning of the 1891 campaign, with winter-wheat prospects clouded by a prospective shortage of 15 to 20 per cent. at this early point in the crop season, and with all the usual vicissitudes of the winter-covered and the growing seasons to pass through yet, the wheat and flour situation in the United States in 1891 may show some remarkable features. Much of the wheat now selling in Chicago at 90 cents and New York at \$1.03 may be worth very much more than those figures during 1891. If the present reports came only from the bulls, they might be translated to mean an attempt to boom export prices, but the reports are general, and there is good reason to believe that the winter wheat plant has gone under the snow in bad condition.

POINTS IN MILLING.

SCIENTIFIC tests of the quality of wheat are the order of the day. In this, as in so many other important things, the French are leading the way by conducting exhaustive experiments with wheats of all sorts from all parts of the earth. The result is that the French wheat-grower, following the advice of the scientific investigators, concerning wheats for seed, time and method for planting and system of manuring, grows an average of wheat on ordinary soil, in favorable seasons, that surprises the wheat-growers of other and more favorably conditioned countries. Among the French experimenters who have done and are doing much to raise wheat-growing to its highest notch are Messrs. Vil-morin-Andrieux and Company, of Paris. These gentlemen obtain specimens of wheat from abroad, sow them in French soil, and publish the results in a series of bulletins sent out to the farmers of France.

FOLLOWING is a specimen of one of their statements concerning red autumn Chiddam wheat: "It is a winter wheat. The straw is white, upright, stiff, not tall, and rather fine. The spike is dark red or brown, inclining to be flat, often curved, almost entirely destitute of awns. The grain is white, spherical, short and very plump. It would be difficult to say to how many varieties of wheat the name Chiddam, or more correctly, Chidham, which is that of a village in the county of Sussex, in England, has been applied. Of this number there remain three which have now acquired the right of citizenship in French agriculture, the white-eared autumn Chiddam wheat grown in Normandy; the white Chiddam March wheat, and that with which we are now concerned. All have a white grain. The red-eared autumn variety is particularly common in the Brie, where it gives very good results. A rather short straw is brought against this wheat, but on the other hand it is admitted to possess the advantage of being able to yield, without bending, very heavy crops of grain. The red-eared Chiddam autumn wheat likes heavy lands, provided the calcareous element be not wanting. In favorable weather the seedings may be continued till December. This wheat is of mean precocity."

CONCERNING "Rousselin" wheat they say: "This is a winter and spring wheat. The straw is white, tall, upright and strong. The spike is long, of a dark red, with spikelets growing rather wide apart; it may be either curved or upright. The grain is white, large and long, is slightly flattened at either extremity, and remarkable heavy and fine. For the knowledge of this variety of wheat we are indebted to the late Mr. Sarti, of La Ruscade, in the Department of the Gironde. In the first year of its cultivation we were struck by its precocity and by the beauty of the grain; later experience merely confirmed this first impression. Rousselin wheat is well adapted to the center and south of France. It seems to take kindly to hot weather and is not afraid of drouth; it thrives better inland than by the sea. As regards ground, it appears to do best in soils that are rather warm and calcareous, with heavy and cool earth. Compared with other wheats adapted to the same kind of ground, it possesses the advantage of being very prolific in straw. It does not stolon very abundantly, and its grain is large, so that care must be taken not to scatter the seed too much. Seeding may take place in autumn, winter and throughout the whole of March. In the neighborhood of Paris it shoots up very readily when sown at the end of March, and at the same time yields well."

FRENCH millers and farmers are equally interested in and benefited by these published experiments, and there is a call for similar information for American farmers and millers. Some steps are being taken, in some States, to direct the selection of wheats for seed, but this country is far behind France and other European countries in this important matter. Here the farmer has been in the habit of sowing wheat that will give him the largest returns per acre, utterly ignoring the value of the grain to the miller and baker. Of course, the miller is not compelled to accept the big-yield

grain if it does not suit his trade, and his refusal to accept has been the only check to the tendency of the farmers to sow for big returns and let the quality question settle itself. Regularly published and widely distributed information, like that quoted in the case of France, would give American wheat-growing a new impetus. The thousands of millers who grind grain grown in the neighborhoods of their mills could distribute the information thoroughly to their farmer customers. Here is a field for the Department of Agriculture to work, a field that offers good returns for every expenditure of money, time or experiment.

RECENT European milling inventions, outside of the Haggemacher "Plansichter" and the Kreuss "Gegenflaechensichter," appear to be confined to the same limits that control American inventions in the same line. Hermann Maede, of Waldenburg, Prussia, German Empire, has recently brought out an improved middlings-purifier. This invention relates to improvements in purifiers in which the middlings are impelled through the gauze by means of brushes, and has for its object the sorting of the grist or middlings and at the same time to remove the husks or bran from the middlings. It comprises a fixed compound cylinder, the lower portion of which is formed of gauze, and the upper of smooth metal, enclosed in a casing and fitted in its interior with a rapidly rotating cylinder carrying a number of brushes, which serve to drive the middlings through the gauze, and to propel the bran into an outlet-spout.

AN English "improvements in middlings-purifiers" is announced by Arthur Maurice Robinson, of Rochdale, England. This patent relates to middlings-purifiers in which a horizontal or nearly horizontal series of fixed or movable troughs or channels is disposed close above a vibrating sieve and combined with valves or equivalent means for varying the sizes of the apertures between the said troughs or channels, and the object is so to combine the said troughs and valves or equivalent devices that there shall be no surface for accumulation of material excepting in the troughs or channels, and air currents can be better regulated and directed. This invention under this first part consists essentially in constructing each trough or channel in two pieces, each having a bottom and side, and in fitting the two pieces together, one over the other, in such a manner that one or both pieces may be moved so as to allow the troughs or channels to be made broader or narrower. In this way the area of the air spaces between the troughs or channels is diminished or increased. A further improvement consists in making the edges of the troughs or channels at an angle, with one edge higher than the other, so that the low edge of one trough and the high edge of the next trough are in proximity. In this way the air currents passing between the troughs are deflected the required degree out of a straight line to insure that the material carried up by the said air currents will be deposited in the troughs or channels and be prevented from falling back to the silk. This invention relates second to middlings-purifiers generally in which there is a horizontal vibrating sieve and an upward current of air, and the object is to remove light branny and like particles from the tailings leaving the said sieve. For this purpose a trunk is combined with the spout or shoot for carrying away the tailings leading to the expansion chamber above the sieve, and further, between the said trunk and expansion chamber a setting chamber is interposed, provided with an adjustable baffle board or equivalent device. Is anything similar to these "improvements" known in the United States?

DECORTICATION still lives among milling inventors. Hugh James Sanderson and Alexander Henry Reed, of London, England, have brought out "a new or improved machine for the decortication of wheat" when in a moist condition, by the action of roughened discs working within a perforated cylinder. The discs, which consist of a metal center coated with a composition containing emery, are mounted on a shaft within a drum, which is rotated at a slow velocity by pinions gearing with tooth rims on each end of the

drum. The pinions are mounted on a shaft driven by the gearing from the shaft. The drum is provided with pivoted doors along its whole length. The doors, when at the top of the drum, are caused to open simultaneously with doors on the bottom of the feed hopper, to which is attached suitable apparatus for dumping the grain. As the drum rotates the doors are closed, and no fresh charge is admitted until the previous charge has been decorticated and discharged. A casing is mounted beneath the drum and is fitted with valves operated by cams by which the bran, richer offal, and wheat are all collected and removed separately. The wet bran may be dried on a heated vibrating plate or by other suitable means. The bran and richer offal are discharged through the perforated casing of the drum by the centrifugal action of the discs. The wheat is discharged through the doors which are caused to open gradually when they are at the under side of the drum. Fresh air is admitted to the drum by helices working in hollow trunnions in the end discs, and to insure circulation of air the discs are made of open work near their centers. What would an American flour maker do with such a machine?

THE CHILIAN MILLING SITUATION.

Referring to the milling exhibition organized in Santiago, Chili, by the Sociedad de Fomento Fabril, the Santiago "Ferrocaril" says; In an interesting memorandum recently published by Sr. Manuel H. Concha, professor of rural engineering in the Agricultural Institute, are some observations on this point which are of the greatest importance. The distinguished professor believes an exhibition such as that projected, and now nearly ready, to be the most effective means of lifting Chilian milling out of the present state of decadence in which it lies, and which is attested by the statistics of the last 25 years. Since 1865 the foreign consumption of our flour has gone on diminishing to an enormous extent. The exports of this article, which in that year reached 554,835 metric quintals, did not amount in 1888 to more than 31,525, which is equivalent to a reduction of more than half-a-million metric quintals. In the whole period of five years, between 1864 and 1868 inclusive, the exports of flour reached 2,009,845 metric quintals (the metric quintal = 230.46 pounds), and in the period between 1884 and 1888 it amounted to only 253,891.

Though Chili, as Sr. Concha observes, is one of the countries that produce the finest wheat in the world, according to the judgment of European experts, our flour has turned out the worst, as was proved in the lamentable failure of our millers at the last Universal Exhibition at Paris, on account of the defective systems employed in grinding the wheat. So pronounced was the failure that some of the jurymen of the exhibition did not believe that the samples of flour came from the wheat exhibited by Chili. For a long time the inferiority of the products manufactured in this country with our flour was attributed to the climate, to the quality of the water, and to other similar causes, but the fact that these same products prepared in Europe, and especially in England, with our flour gave there excellent results which were unattainable here, although manufacturers had imported from those countries capable workmen and improved machinery, has made manifest the real origin of the evil, which is no other than the defective systems employed in milling. The decadence of this branch of industry is due: 1. To the fact that Chilian milling has remained stationary, without following the modern improvements, without drying and barreling the flour, which is sent long distances, and using the defective stone system. 2. To the fact that Australia, California, the Argentine Republic and other countries constituting other markets, produce flour in abundance and of superior quality, manufactured by the roller system and others better than ours. 3. To the fact that some exporters have committed abuses which have damaged the reputation of our flour, and which must be repressed in all branches of our industry by the severest measures.

After briefly explaining these causes of the considerable reduction brought about in our flour trade, although Chili

was for many years the exporter of flour to Australia, Peru, California, Cape of Good Hope, Brazil, Great Britain, Ecuador, Columbia, Bolivia, the Argentine Republic, Uruguay and China, the pamphlet we are dealing with adds the following illustrative data: The United States, which in 1870 exported 3,463,333 barrels, have gone on increasing their exportation, until in 1887 it was 11,518,449 barrels, and supply a great many of our old markets. The Argentine Republic, which for the last 25 years was supplied by the United States and Chili, has quite recently exported more than 70,000 metric quintals, or more than double our whole annual exports. Australia, Brazil, Peru and Uruguay have likewise progressed in the milling industry, to our prejudice. In all the above countries the manufacture of flour has been considerably improved and its production cheapened. Thus, the Argentine Republic now possesses 442 mills, of which 312 are driven by water-power and 130 by steam-power. The old stone mills have been giving place to the rollers, the advantages of which are notorious. According to the census of 1887, ten years ago in the province of Santa Fe, which is one of the most progressive, there was not a single roller mill, and at the above date there were 7 roller mills and 47 mixed system, the total number of mills making flour of a very good class in general being 70. Milling has increased on a greater scale in Australia, and more especially in the United States, where the improvement has been very considerable.

Meanwhile, the Chilian milling industry has only a few mills on the roller system, the defective stone system prevailing almost over the whole country, the inconvenience of which we have explained. Our flour intended for exportation is not dried, and is sent in bags and not in barrels, as is to-day the custom in the United States, Great Britain, France, Austria, Switzerland and Germany. For this reason the flour ferments and takes an acid flavor, becoming unsuitable for bread-making. With us in this respect it has happened somewhat as with France. The exportation of French flour, which in 1875 was 2,144,710 metric quintals, diminished so rapidly that in 1887 it amounted to 48,341 metric quintals, while the imports, which in the first of the years cited were 28,838 metric quintals, rose in 1884 to 503,491. The markets of France were supplied first by Austria-Hungary, which in 1886 exported 1,465,915 metric quintals. Its roller mills were at that time the most perfect in the world. During ten years they gave a half-yearly dividend of 14 per cent., while one of them gave an average dividend of 27 per cent., the highest being 40 per cent. Switzerland, Great Britain and Germany quickly adopted the roller system and improved the quality of their flour.

The French millers relied at first upon the superiority of their stones, reputed to be the finest in the world, and looked with indifference on the progress of Hungary; but the facts convinced the French millers that it was necessary to effect in the milling industry the transformation initiated by Hungary, and at present France is actively engaged in replacing its old mills by roller mills. Such is the result at which the French millers arrived after comparing in innumerable exhibitions the flour produced by the old stone mills with that produced by rollers. Vain were the efforts of the partisans of stone milling to maintain the superiority of that apparatus by means of ingenious modifications, but which did not satisfy the conditions for producing a flour of superior quality so completely as the roller system. Nevertheless, we believe it right to recognize that the breaking of the grain is done very well by metal discs, according to some, better than with rollers.

The Millers' Association of Great Britain and Ireland organized an international milling exhibition with the object of studying and comparing the new processes, and with remarkable unanimity pronounced in favor of the rollers. Many thousands of rollers have been built in Great Britain within the last ten years. Switzerland is one of the countries where roller-milling has been most popularized, and many of the manufacturers in that country have obtained high awards in recent exhibitions, including the last one at Paris. Germany and Italy have followed the example of

the countries mentioned. In 1886 the city of Augsburg, and in 1888 Milan, held exhibitions in which the principal manufacturers of milling machinery took part. In both countries a great number of mills are being transformed, and other new ones erected on the roller system. One of the countries in which roller-milling has spread most, and reached a marked degree of perfection, is the United States. From data which I possess from various States of the Union, I believe it would not be an exaggeration to say that the number of new or converted roller mills in the United States exceeds 20,000.

Thus, then, modern roller-milling is making its triumphal progress through all countries of the old and the new continent. Wherever it has appeared it has met with the most enthusiastic and unanimous approval in competitive exhibitions. These data and particulars are worthy of consideration by the millers of our country in the important branch of national production which they direct. The congress of millers and the milling exhibition, due to the progressive initiative of the Society for the Encouragement of Trade (*Sociedad de Fomento Fabril*), is intended to make these new processes known, in order that, after being studied minutely from the mechanical and economical point of view, they may be introduced into the country. We shall never win back the markets we have lost, observes Sr. Concha, but we shall considerably increase the sale of our flour, and we shall be able to manufacture much better than at present one of the most important articles of public consumption. With our flour restored to credit we shall replace the exportation of wheat by that of flour, to the great profit of the industry and wealth of the country.

The failure of our millers in the recent Paris exhibition should not discourage us, as it did not discourage England when her products met with failure in the first Paris exhibition. As it will be remembered, England then perceived that her products, in spite of their good quality, were much inferior in beauty of form and artistic merit to those of the other competing nations. This failure was for her a lesson which she proposed and knew how to utilize for her future improvement, stimulating by all possible means industrial taste and education. Prince Albert then created the colossal hall for a permanent art exhibition which bears his name in London. The results answered his patriotic expectations, and a marked change has been effected in the artistic perfection of England's products. Our milling industry must endeavor to attain a similar success from the lesson which experience has just given us. As we see in the pamphlet which we are discussing, nothing would be easier than the transformation of the old stone mills in order to adapt them gradually to the requirements of modern progress. Millers who do not dispose of sufficient funds to effect at once a radical transformation or bear the stoppage of the mill's production, could, while keeping the stones, go on adding, little by little, rollers and purifiers until their system of milling was transformed. Those who possess more abundant resources can, without disturbing their business, effect the transformation with greater rapidity, or proceed as the progressive manufacturer, Sr. Sutil, has done, abandoning completely the old mill in order to set up another, completely new, on the roller system adopted in Switzerland.

THE SELECTION OF SEED WHEATS.

Concerning the selection of wheats for sowing, the London, England, "Miller" says: All cereals are liable to degeneracy by continued culture on similar soils, although there are some descriptions of soil noted for producing good quality of wheat, and consequently good seed, for long periods without change, while the same seed, when grown on a different soil, degenerates rapidly, and, as a rule, the worse the soil is, the more rapid the reversion. During recent years many new and valuable varieties have been introduced, so that by a few comparative trials each farmer should obtain the wheat best suited to his particular soil and climate. In a recent article by Mr. H. Evershed, published in the *Journal of the Royal Agricultural Society*, "On Varieties of Wheat and Methods of Improving Them," the author

says: "There is no best sort of wheat for all soils alike, and in some neighborhoods white wheat does not succeed, while in others only the most healthful and vigorous wheats are capable of withstanding the vicissitudes to which the crop is exposed." He further remarks: "A plant improver can hardly be expected to produce a cereal capable of withstanding cold, wet, poverty, starvation and over luxuriance: he can not work miracles, but it is marvelous what he can do."

It is generally found to be the case that well-cultivated fertile clay lands produce wheats of the finest quality; loams yield greater quantity per acre, but not grain of equal merit as to strength of flour. Thus clay lands may be said to be constitutionally better adapted for keeping up the strain of wheat and perpetuating its good qualities for more years than light and sandy soils. Hence we should expect that American or Indian grown wheats from light virgin soils would much sooner wear themselves out than those produced on the stiffer and more gradually maturing soils of England. The remarkable vigor and vitality which certain descriptions of wheat acquire when introduced into a new locality is noteworthy. "Fenton" wheat for example, when first brought from Scotland to the South of England, showed a new productive power. The "Ladoga" wheat from Russia is highly esteemed in Canada for its early ripening tendencies. The quality of this variety is that of a valuable hard grain, and it has been found, in the course of two years' experiments, to ripen in Canada ten days earlier on the average than the Red Fife. We recommend the "Ladoga" for trial on English soil. Against this we may mention that some remarkably fine samples of white wheat, weighing respectively 66½, 67 and 68 pounds per standard bushel, procured from Australia, and sown in England, so rapidly deteriorated, that after three years of cultivation in this country the produce was little better than "chicken food."

There should be but one opinion among farmers as to the paramount importance of sowing good and prolific seed, for "as the seed so the crop." And although the vegetative power of a seed does not consist in the size or plumpness of the grain, yet it is in accordance with common sense that a light, weak and puny seed can not produce a strong plant, or result in so large a total crop as a large and fully developed kernel. It is more than a quarter of a century since Mr. Ronald, of Glasgow, carried out a series of experiments to determine the comparative virtues of large and small grains of wheat in growing the crop. He purchased some white wheat, such as was being sold for ordinary seed to the farmers, and he extracted about one-fourth of the whole by screening it with an appropriate size of mesh. The remaining three-fourths that did not pass through the screen were tried numerically against the small grain, with the following results: Large seeds—400 produced 316 plants and 1,572 ears, which weighed 106 ounces. Small seeds—400 produced 256 plants and 606 ears, which weighed 32 ounces. The respective weights included the straw of the ears, and the experiment shows an extraordinary contrast between the large grain and the small grain. The seed was dibbled at the rate of two pecks per acre. Though experiments of this limited character are rarely of great value, and not always verified when adapted to ordinary practice, yet we may undoubtedly learn the propriety of selecting the very best seed obtainable for our crops.

In the selection of seed wheats the attention of the cultivator should be confined to such descriptions or varieties as will, with proper care, reach the highest limit of quality in the locality where they are grown. In reference to this point we may mention that Messrs. Lawes and Gilbert conducted at Rothamsted for twelve successive years a series of field experiments with 26 different descriptions of wheat, 15 reds and 11 whites, sown side by side, and all treated exactly alike. The results show that the average yield varied from 53½ bushels to 36½ bushels per acre, and the average weight per standard bushel of dressed grain ranged from 58½ pounds with "Rivetts" to 63½ pounds with "Red Nursery." In the year of highest average produce, 1878, there was a range per acre from 66½ bushels of "Rivetts" to 42½ bushels with "Hunter's White." In the same year "Burwell" or

"Old red Lammas" took the lead in weight, yielding 64 pounds per imperial bushel. It may further be remarked that Professor Blount, as the result of many painstaking investigations, came to the conclusion that wheat is particularly sensitive to causes affecting its development, and that arrested maturation may probably produce two results in the composition of the final product, the seed, according to the particular period in the growth of the plant at which such arrested maturation occurs. Thus the supply of nitrogen and phosphoric acid to the grain he considers is cut off by injury done to the crop by storms. And in case of wheats which owe their small size and shriveled condition to wet weather just before harvesting, the check to development is supposed to come after the nitrogenous portion of the seed has been stored up, and prevents the accumulation of starch which is necessary to make a plump grain.

What, it may be asked, is the significance of these facts? In the first place, it is that the character of development of wheat left to ripen depends very much more upon season than upon manuring. Indeed, if two crops of wheat of exactly the same description be grown side by side, but yielding, under the influence of manure, twice the amount of produce, and both under such conditions of season that each fully and normally ripens, the composition of the final product, the seed, will be very nearly identical in the two cases. To the farmer the most important characteristic, and one by which wheat is usually valued, is its weight per bushel, and this, as a rule, may be taken as a fairly good indication of high quality, and vice versa. In other words, there will be found but little difference in the composition of truly and normally ripened seed of one and the same variety of wheat, although grown under different manurial conditions. But, on the other hand, as variation of season affects the character of development and the conditions of maturation, there may obviously be, with these, very wide difference in the composition of the grain, and consequently in its fitness to be used for the reproduction of another crop.

A CHICAGO report of December 20 says: General reports show that so far the month of December has been exceptionally fine and that while storms of rain and snow have been

the order of the day in the East, the Mississippi Valley has experienced a period of dry, cool weather, and a general absence of both rain and snow. All things considered, however, the general conditions of the winter wheat crop are not as favorable as they were thirty days ago. The Hessian-fly still maintains a strong hold, particularly in the early-sown wheat in some portions of Michigan, a little in Indiana, more in Central and Southern Illinois, and particularly bad in Kansas and Missouri. Last year at this time the growing wheat showed no signs of fly at all, but on the opening of spring, and as the season advanced, the ravages of this insect became more and more apparent. To this cause can be largely traced the shortage of the crop of 1890. One of the largest winter-wheat growers in the West reports that close investigation shows that the Hessian-fly is in all the territory occupied by it last season. The late-sown wheat generally looks as well as a year ago at this time. A small percentage of the present wheat crop remains in farmers' hands. Some of the large mills in the Mississippi Valley report that they are receiving wheat from Chicago, and some of them have been using wheat from Oregon.

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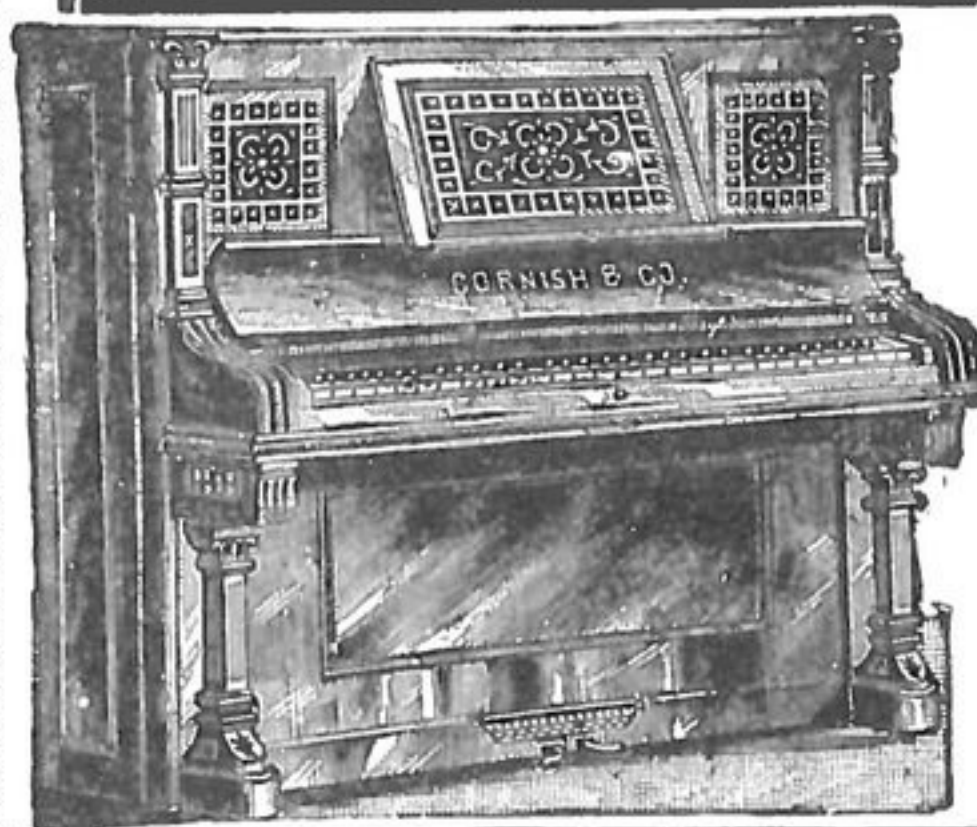
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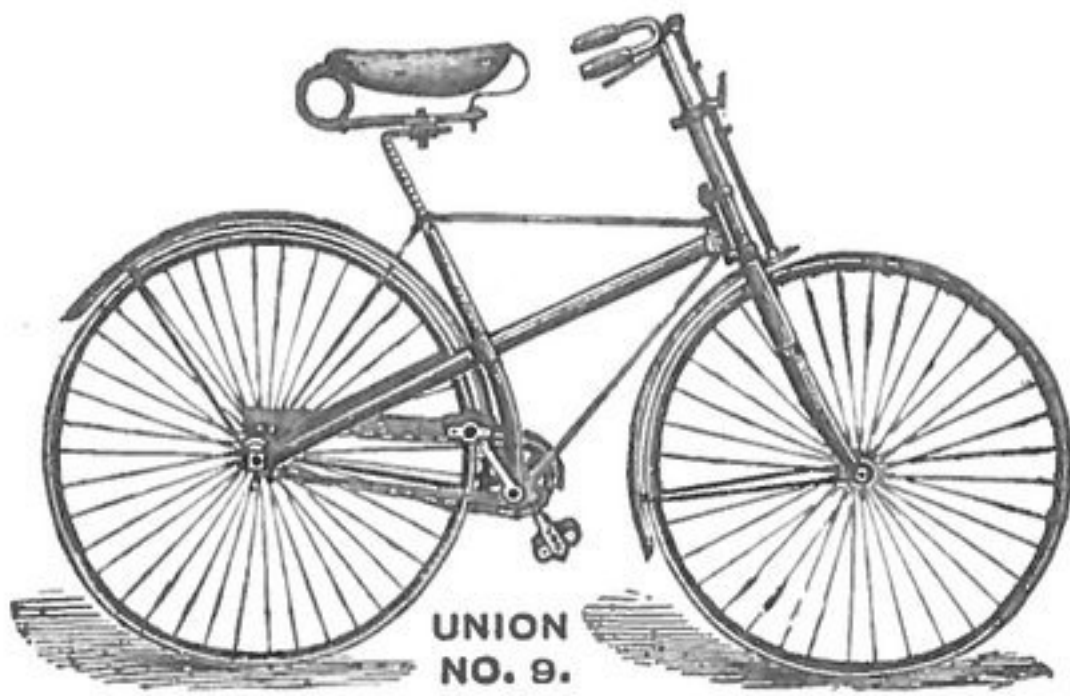
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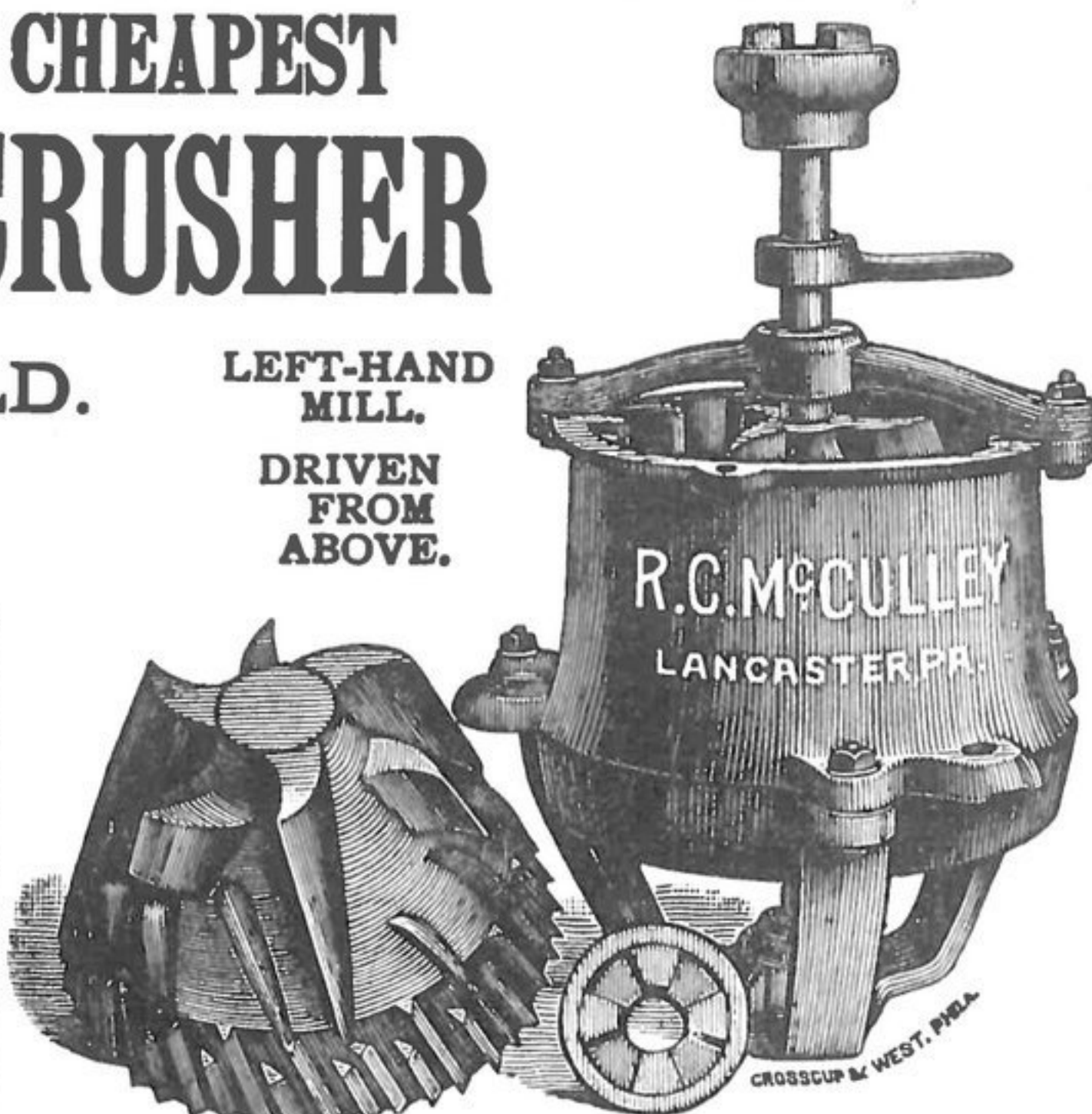
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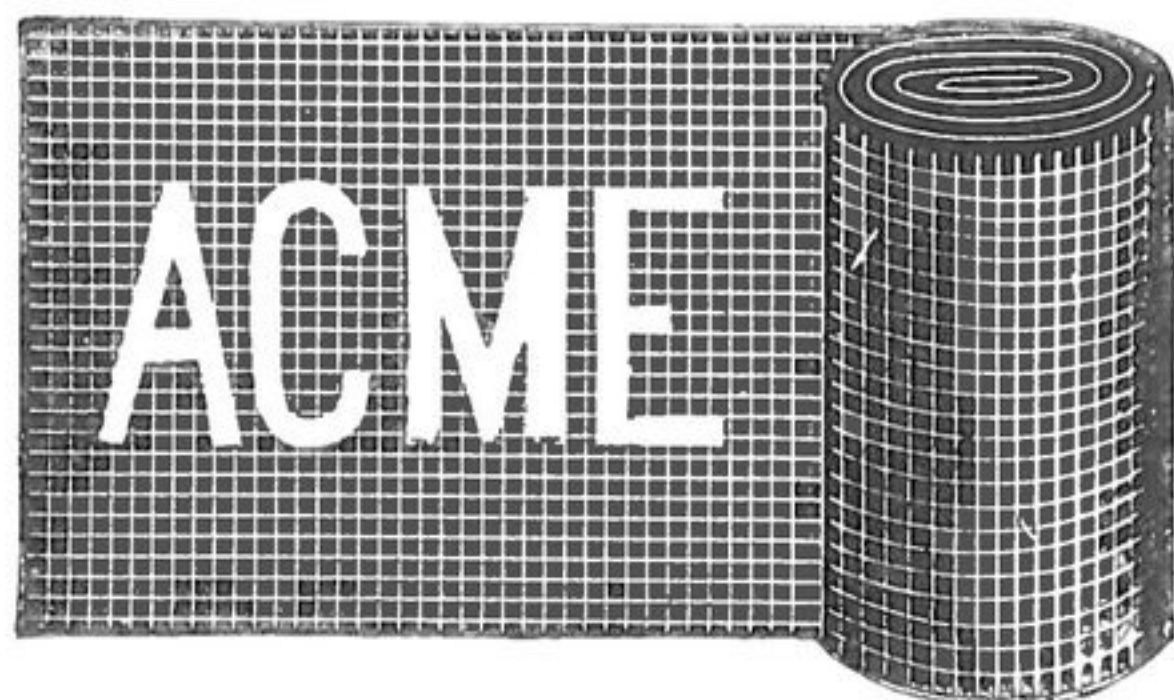
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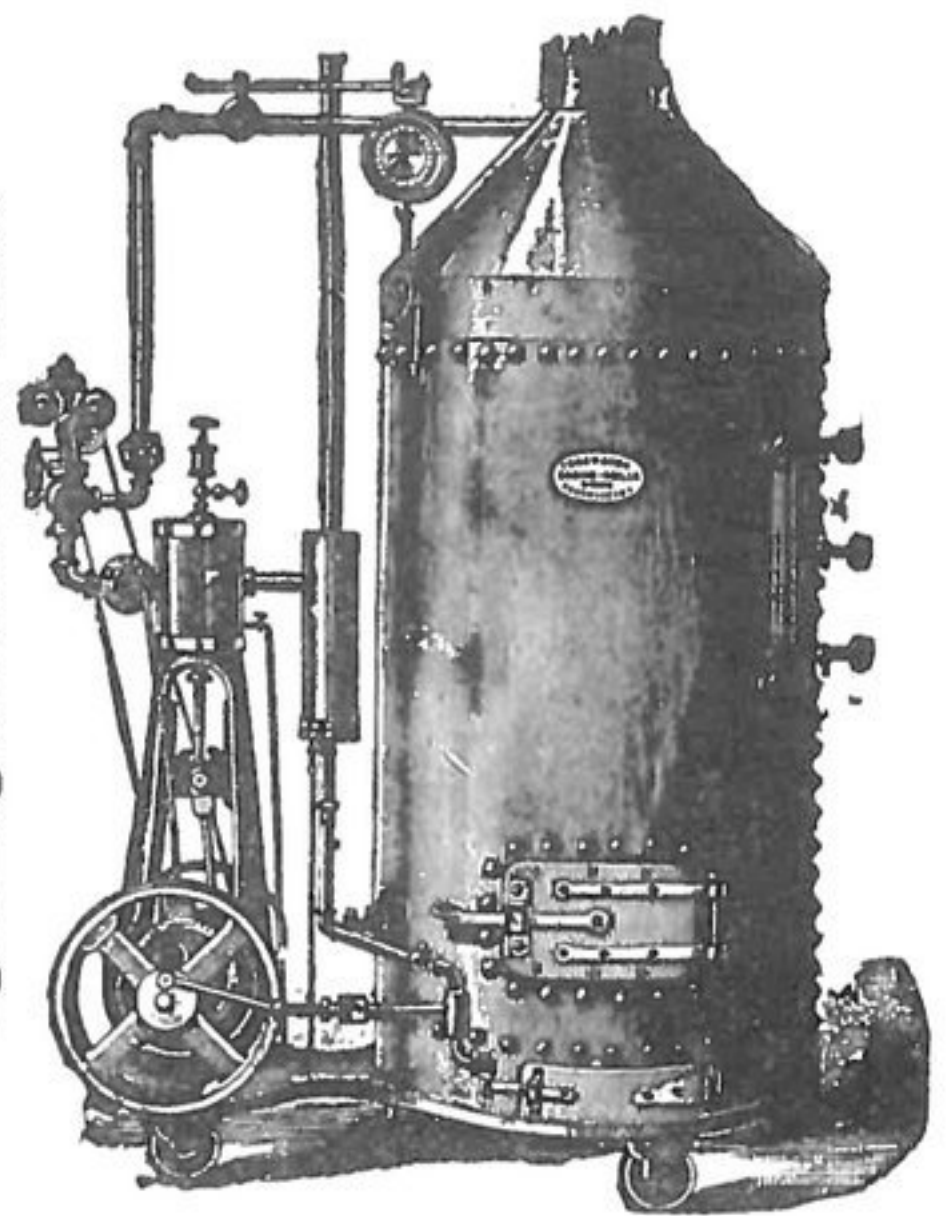
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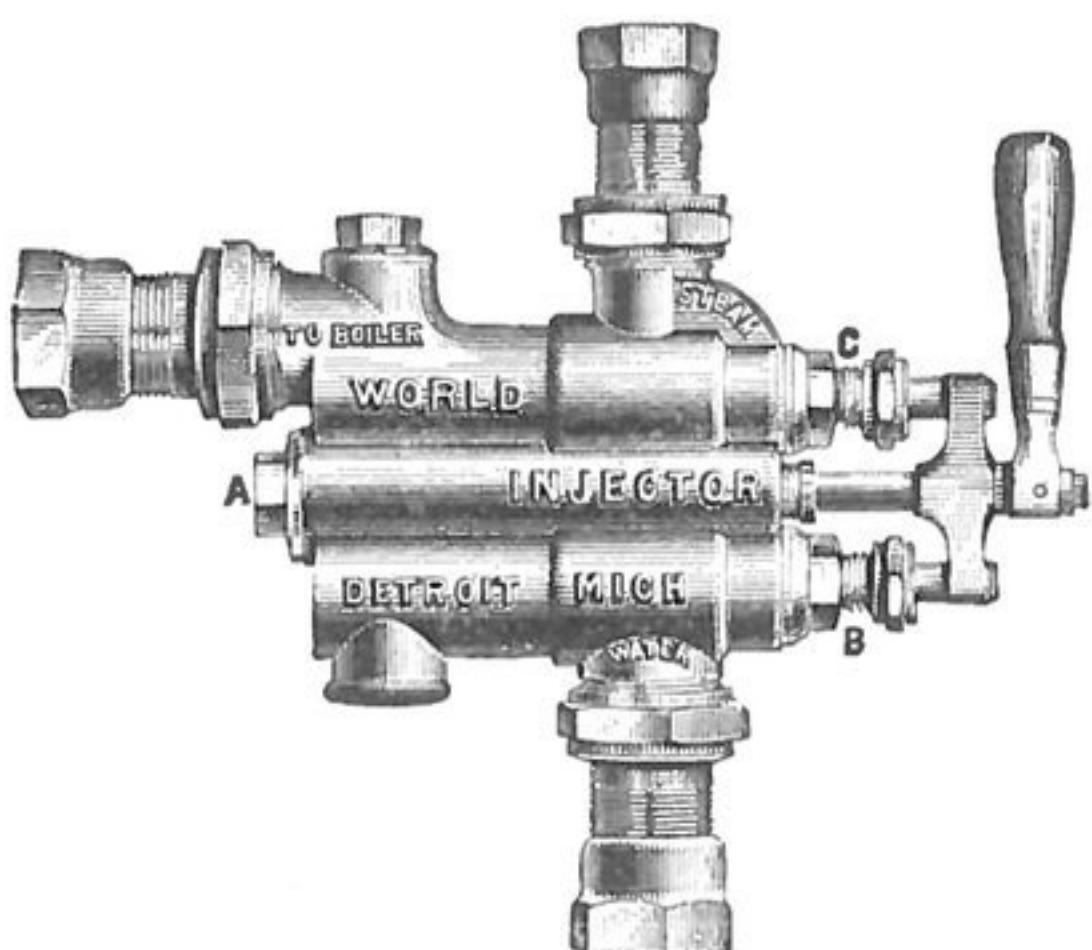
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 L. A. Rizer, Keyser, W. Va., rebuilt flour-mill.
 C. T. Hancock's grist-mill, Metcalf, Ga., burned.
 Scoggin Bros.' grist-mill, Hickory, Miss., burned.
 Wm. W. Jackson's mill, Farmville, Va., burned.
 R. P. Smith, miller, Northampton, Mass., is dead.
 Mrs. S. G. Kittrell's grist-mill, Wrightsville, Ga., burned.
 Townsend & Shoemaker, Strawn, Tex., build a roller mill.
 The North Dakota Elevator, Elliott, N. D., burned; loss heavy.
 Mr. Wright, Trappe, Md., wants roller machinery for his flour-mill.
 John Heery's elevator, Clarksville, Ia., burned; loss \$60,000; no insurance.

Pringle & Son's elevator, Grant, Neb., burned; loss \$6,000; insurance \$5,000.

The milling industry has been only indirectly affected by the recent financial flurries.

Morgantown, W. Va., men incorporated the Victor Mills Co. to build a flour-mill.

Campbell & Gonwicha, grist-mill, Mayville, Mich., are succeeded by Campbell & Catlin.

Warner, Moore & Co., Richmond, Va., put new machinery in their flour-mill at Manchester, Va.

Weather throughout the West has been very warm and there is very little frost in the ground anywhere.

Tennessee has sown 1,185,395 acres to wheat on the 1891 crop. This is 10 per cent. less than her area on the 1890 crop.

J. W. Robinson and others, Pulaski City, Va., organized the Pulaski Milling & Mfg. Co., capital stock \$30,000, to build a flour-mill.

In 30 years the acreage devoted to corn in the United States has increased $5\frac{1}{2}$ -fold, but the yield of corn has increased less than 4-fold.

A. Zeitinger & Son, Della, Md., have bought and will operate the Greenfield flour-mill near that place; they want new machinery for the plant.

A new Missouri milling firm is the Cassville Roller Mill Company, Cassville; capital \$8,000. Incorporators Wm. Tolbert, Silas R. Reynolds and Wm. L. Martin.

Officers deny the reported failure of the Iowa, Minnesota & Dakota Elevator Company at Luverne, Minn., and say the rumor was started by local creditors who wished to embarrass the company.

A new milling concern in Illinois is the Bluffs Roller Mill Company, of Bluffs, for the manufacture of flour, meal, bran and shipstuffs; capital \$10,000. Incorporators J. M. Cranch, P. L. Fusen and M. L. Davy.

The Portland *Oregonian* estimates that the three Pacific coast States will have a surplus of 39,000,000 bushels of wheat for export. Of this amount California will have 23,000,000 bushels, and the balance of 16,000,000 bushels is attributed to Oregon and Washington.

Says the Winnipeg, Manitoba, Canada, Commercial: A good deal of complaint is made in the East about the dirty condition of Manitoba oats, and there is certainly some reason for this. It is stated that one car of oats sent to Montreal contained 2,000 pounds of dirt and foreign substance. This amounts to the payment of about \$9 freight charges on dirt.

Prof. Snow, of the Kansas State University, has discovered the existence of a disease resembling cholera, peculiar to the chinch-bug, and

which is easily propagated, and will doubtless eventually afford farmers complete relief from the destruction of their crops by this pest. During the past summer infected bugs were let loose in a bug-infested field. The disease spread so rapidly and was so fatal that the field was soon rid of the pests. Many farmers have made application to the professor for carcasses of the bugs which have died from the cholera.

The Jerusalem corn, says the *Kansas City Star*, which is becoming so popular in western Kansas, was introduced by a Finney county farmer, who received two grains of it from a missionary from Palestine. The grains are pure white and nearly flat. It grows better without moisture than with it, and only fails when the hot winds neglect to put in an appearance.

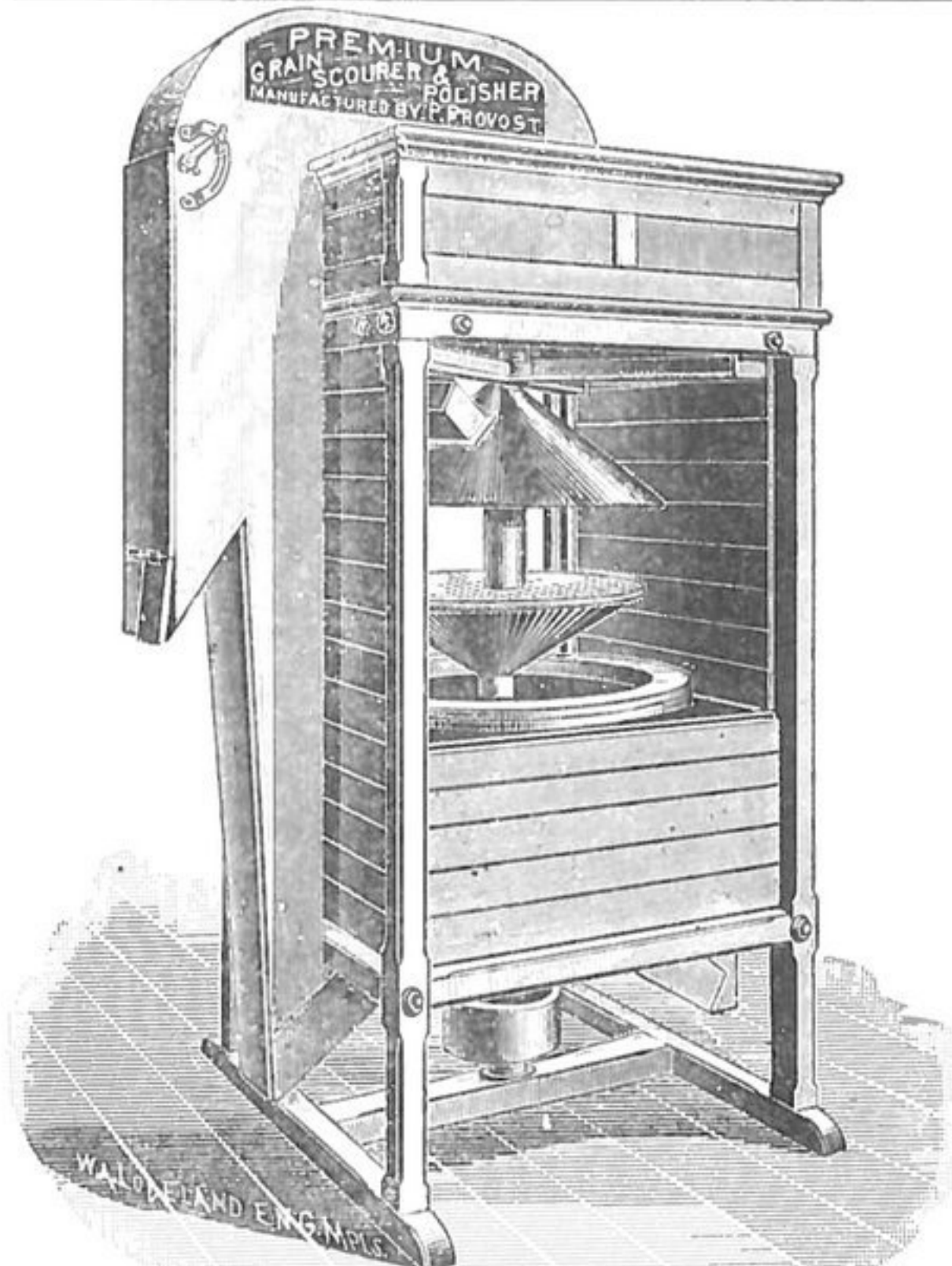
Late reports from the Argentine Republic contain the following: The continuous drought during the last month is said to have done serious damage to the Province of Azul, where crops will be in consequence but small. Diamante and Santa Fe, the two principal wheat-growing districts, have so far to report a good crop in quality as well as in quantity. The farmers there have even commenced with bringing home already.

A Kansas City, Mo., report reads: Reports from Kansas about dry weather and Hessian fly are bad and growing worse daily. There has been no rain for two months. The fly is all over the State, the weather is warm, and in western Kansas the wind is blowing the soil from the roots of the wheat. Every commission man here receives letters daily complaining of damage. It is conceded by every one here that the situation is bad.

C. O. Bartlett, of Cleveland, O., has made the following sales of his "Economic" magnetic separator: W. T. Pyne Mill and Supply Co., Louisville, Ky.; Union Feed Co., Chattanooga, Tenn.; Aug. Heine, Silver Creek, N. Y.; T. C. Hanna, Pittsburgh, Pa.; B. T. Starr & Co., Baltimore, Md.; Williams & Groat, Portland, Ore.; Huntley, Cranson & Hammond, Silver Creek, N. Y.; W. J. Barker, Vienna, N. J., and Brewster Bros. & Co., Unadilla, N. Y.

Says the Winnipeg, Manitoba, "Commercial": It has been shown by practical experiment at Virden, Manitoba, that first-class flour can be made from badly bleached wheat. A farmer offered a load of very hard looking wheat on the market, for which the highest bid he could obtain from half a dozen grain buyers was 30 cents per bushel. The farmer refused this and finally took his load of grain to Koester & Son's mill, at Virden, and had the grain ground to flour. A small quantity of the flour from this wheat was kept by the miller for the purpose of testing. A loaf of bread from this flour was shown, and it appeared to be an excellent article. It was of good color, light and sweet, and in every sense a really good bread. The wheat was apparently very badly damaged from bleaching, and would generally be considered as almost unsalable for milling purposes. This wheat was also slightly frosted.

Francis Wyatt, to whom was sent a letter of inquiry as to the inferiority of American to Canadian barley for brewing purposes, says: "It is a matter of tradition and prejudice. The fact of the case is that the majority of American farmers have now learned that a good malting barley must be grown under certain well-defined conditions of soil and climate, the former a sandy loam containing much lime, the latter temperature moderately warm and not too wet. They have also learned how to handle their barley after gathering in their crops, and thus of 60,000,000 bushels annually provided about one half is of excellent quality for the manufacture of malt." To this we may add that our rich open prairie soils are not well adapted to barley, except they be a rich, sandy loam. In the timbered regions the firm wheat soils are excellent for barley, and the plains regions where there is moisture enough to bring wheat forward are notable for raising the finest barley in the world. This is especially noticeable in Utah, Oregon, California and other regions west of the Rocky Mountains, where there is sufficient rainfall to bring the crop forward or where irrigation is possible, since the dry later season allows curing the grain in the best possible condition. For brewing the grain must not only be plump and hard, but bright as to color. Even heavy dews striking the heads in curing will discolor the grain.



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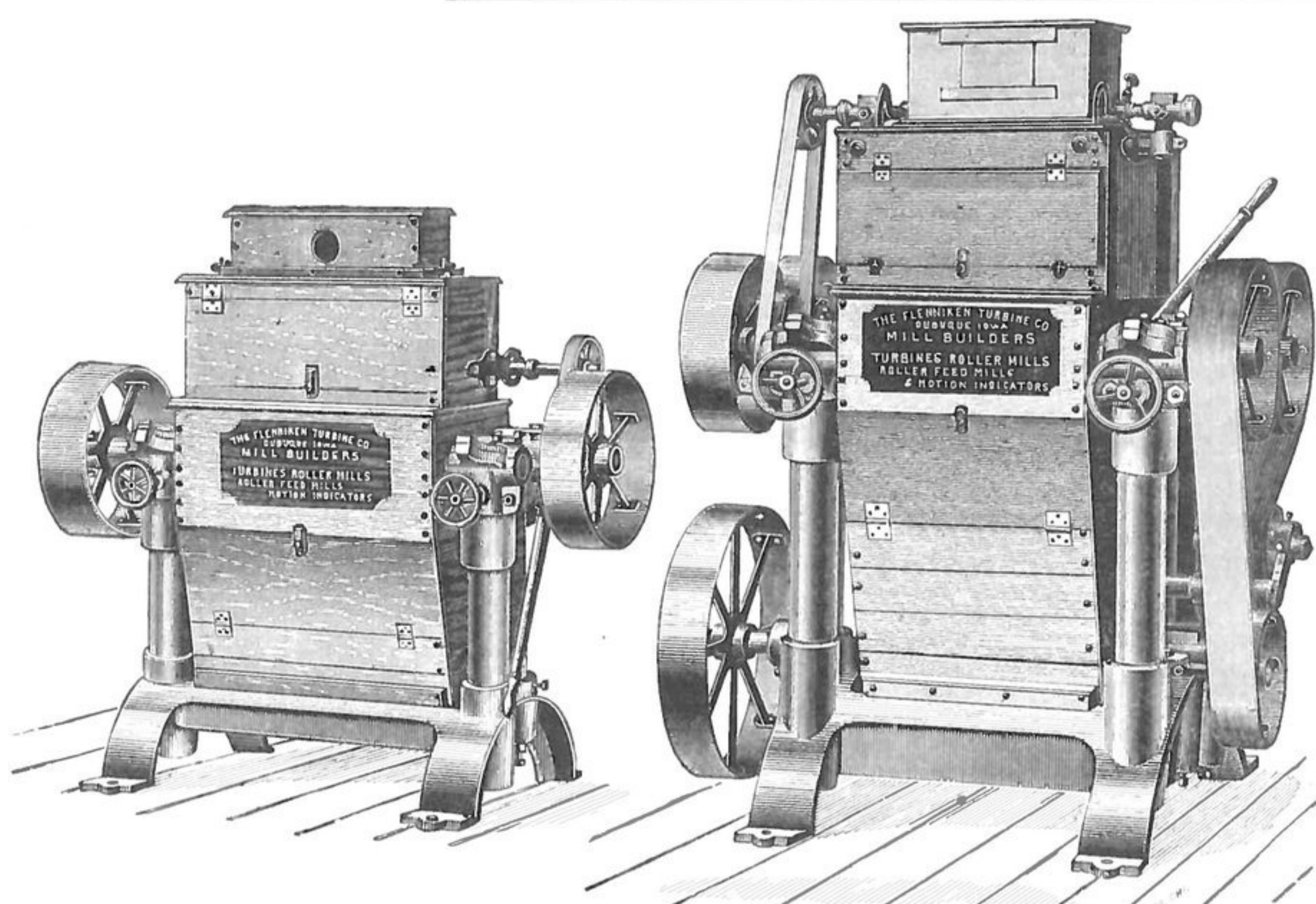
MINNEAPOLIS, MINN.

ONE REDUCTION TO THE FRONT!

*Ye jolly millers, one and all,
Who granulate with burrs,*

A Moses has Come to Deliver You from Egypt. Cease Trying to Make Bricks without Straw. The Red Sea of Expense Has Been Divided.

The Wilderness of Reductions has Been Shortened. There is Manna in Abundance for Those Who Believe. Listen to the Glad Tidings of Great Joy!



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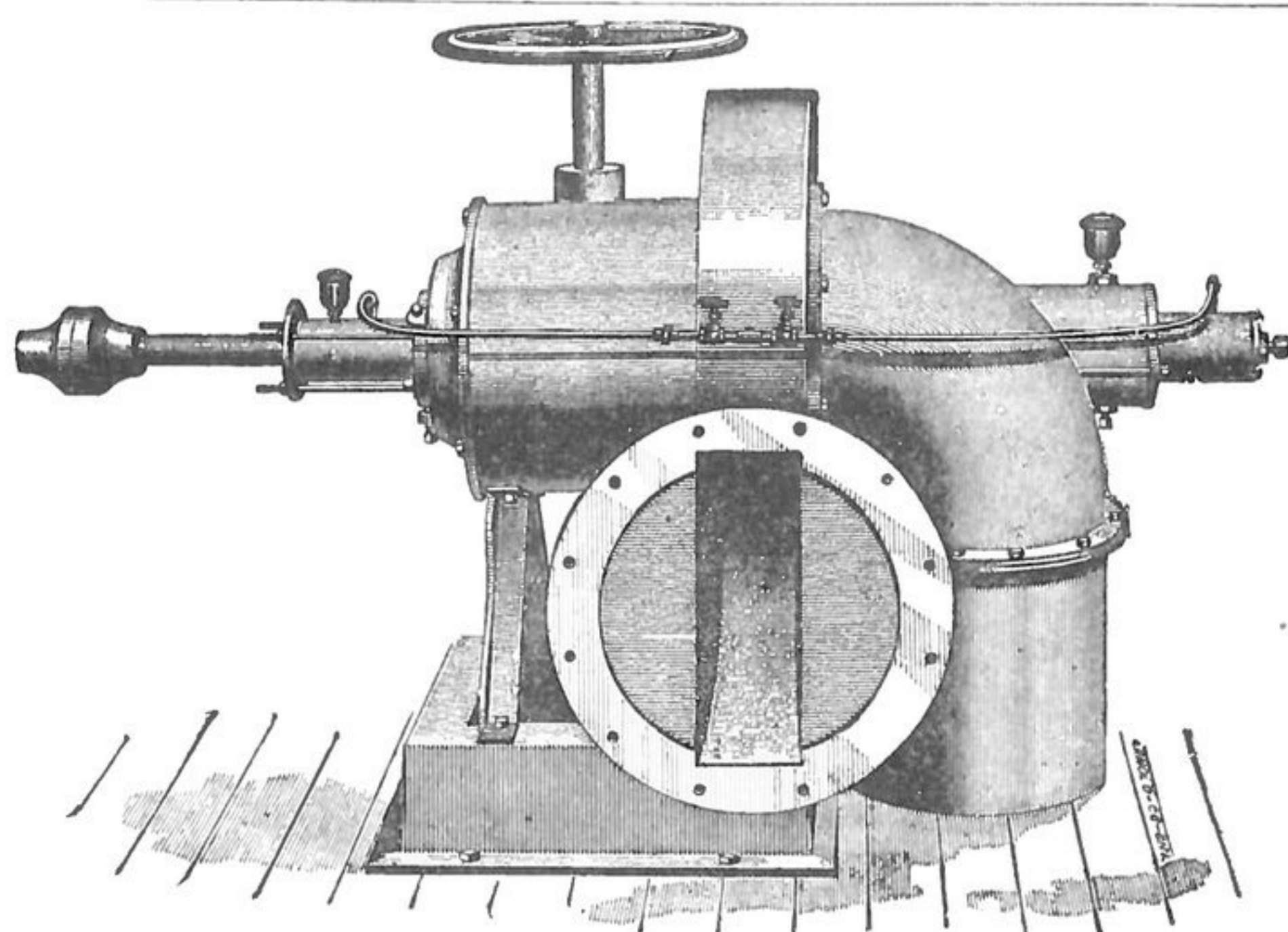
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DUBUQUE, - IOWA.



EUROPEAN ECHOES.

AN English paper reports the case of a miller who was fined 20 shillings and costs at a petty sessions for having in his possession four weights which were light. This defendant pleaded that he had found the weights when he took over his premises, and that he "hardly ever" used them. The bench thought he had been merely guilty of negligence, but imposed the fine in the interests of the public. The public should be protected against the "negligence" of the "short-weight" dispensers of both flour and bread.

THE year book issued by the statistical central committee of the Russian ministry of the interior is an interesting publication, throwing much light on the condition of the Russian people. According to the work, the estimated population of Russia is 110,628,676 souls, of whom about 100,000,000 inhabit European Russia, without Finland and the Caucasus. Marriages are constantly on the increase, their number in 1888 being 871,476. In the same year 4,585,741 births were registered, against 2,953,116 deaths. The increase of population is consequently 14.8 per 1,000, this percentage being exceeded by no other European State. The consumption of wheat in all Russia being only 17,500,000 to 18,000,000 quarters, the per capita requirements are only about 1½ bushels. Of rye the consumption is very large, nearly 6 bushels per head.

THERE seems a great probability that, to allay the popular outcry against "dear bread," the high cereal import duties of the German Empire, 5 marks per 220.46 pounds of wheat, and 10 marks for the same weight of flour, will shortly be reduced. Dr. Lucius, the protectionist Minister of Agriculture, has resigned, and with him the chief impediment in the path of the tariff reformers is believed to have disappeared. In France, on the other hand, a sub-committee of the tariff commission has recommended that the duty on bread be raised from 1.20 francs to 6 francs per hundred kilos., or 220.46 pounds. Such a step would only be logical as long as the high dues on grain and flour are maintained; but still the proposal to tax the poor man's loaf meets with little favor from a section of the press. Perhaps the best illustration of the practical difficulties that wait on protection pushed to its extreme limits that has ever been furnished is to be seen in Portugal. There millers are not permitted to take foreign wheat out of bond until they can show that they have already used a quantity of home wheat 200 per cent. in excess of the foreign grain they propose to grind. Moreover, they have lately been restricted as to the price of their flour; the natural result has been a strike, not of operatives, but of master millers. To avert a bread famine the Government has been forced to import flour on its own account, and barely three weeks ago this State flour was first sold to the public.—*London "Miller."*

V. CAILLARD, who is so well known in connection with the administration of the Ottoman debt, and who is an admitted authority on the resources of Turkey, has lately called attention to the great natural capabilities of Asia Minor as a wheat field. According to his estimate, that country has an area of about 729,000 square miles, or 406,506,000 acres, and of this large tract of country one-third, or 155,000,000 acres, is of exceptional fertility. That would mean a cultivable area fully equal to the land under tillage in the United States. The climate of Asia Minor is good in the main. Unfortunately, the country is destitute of railways, and there is no means of bringing cereal or other agricultural produce from the interior to the sea, so that a great possible granary is left untapped. Mr. Caillard proceeds to urge that "it would surely be worth while for English capitalists to turn their attention to the construction of light railways from the interior of Asia Minor to various convenient points on the coast. Turkish cereals would then, to a great extent, take the place of American; they would certainly be inferior in price, while quite equal, if not superior, in quality." Commenting on this, the *London, England, "Miller"* says: "Be-

fore accepting the opinion that Asia Minor wheat would be in every respect the equal of American wheat, it would be necessary to take expert testimony, while as regards price it is probable that other persons besides farmers think that the price of wheat in this country is quite low enough. It is possible to have too much of a good thing, even of cheap wheat. On the other hand, it is as well to be reminded of the immense cereal wealth of Asia Minor, a country within a week's journey from our shores. The question is, how is this great granary to be tapped? Mr. Caillard's light railways are not so easy as they look, even in these days of reduced consols. It can hardly be supposed that any syndicate of capitalists would build railways in such a country unless they received the concession of a strip of land along the line. But such a concession the Porte never would or could make. It must be remembered that in Turkey foreigners are subjected, not to the law of the land, but to the jurisdiction of their own consuls and ambassadors. This anomalous state of things is due to Sultan Mahomet, the conqueror, who, to entice European merchants into his dominions, granted them the privilege of living under their own laws. These were the famous capitulations which have done Turkey some good and much harm. The grant, therefore, of a belt of land to any railway company would mean the erection of a foreign state, or, worse still, of a conglomeration of foreign states, within the dominions of the Sultan. It is pretty safe to conclude that, so long as the capitulations exist, so long will railway enterprise in Turkey be impossible on any large scale. This is much to be regretted, because the country wants railroads almost as much as anything. It is but three or four years since a magnificent harvest in Asia Minor was literally thrown away. It is computed that but one-sixth of the wheat raised that year by the peasants of Anatolia was consumed by them. The rest rotted for want of railways to convey it to market. This journal has often called attention to the magnificent capabilities of the Euphrates and Tigris valleys in respect of wheat-growing, and the same claim may be urged with equal truth on behalf of Asia Minor. And taking into account the relative soils and climates of these two portions of the Ottoman Empire, it is at least probable that for milling purposes the wheat of Asia Minor would be preferable to that of Mesopotamia."

COTEMPORARY COMMENT.

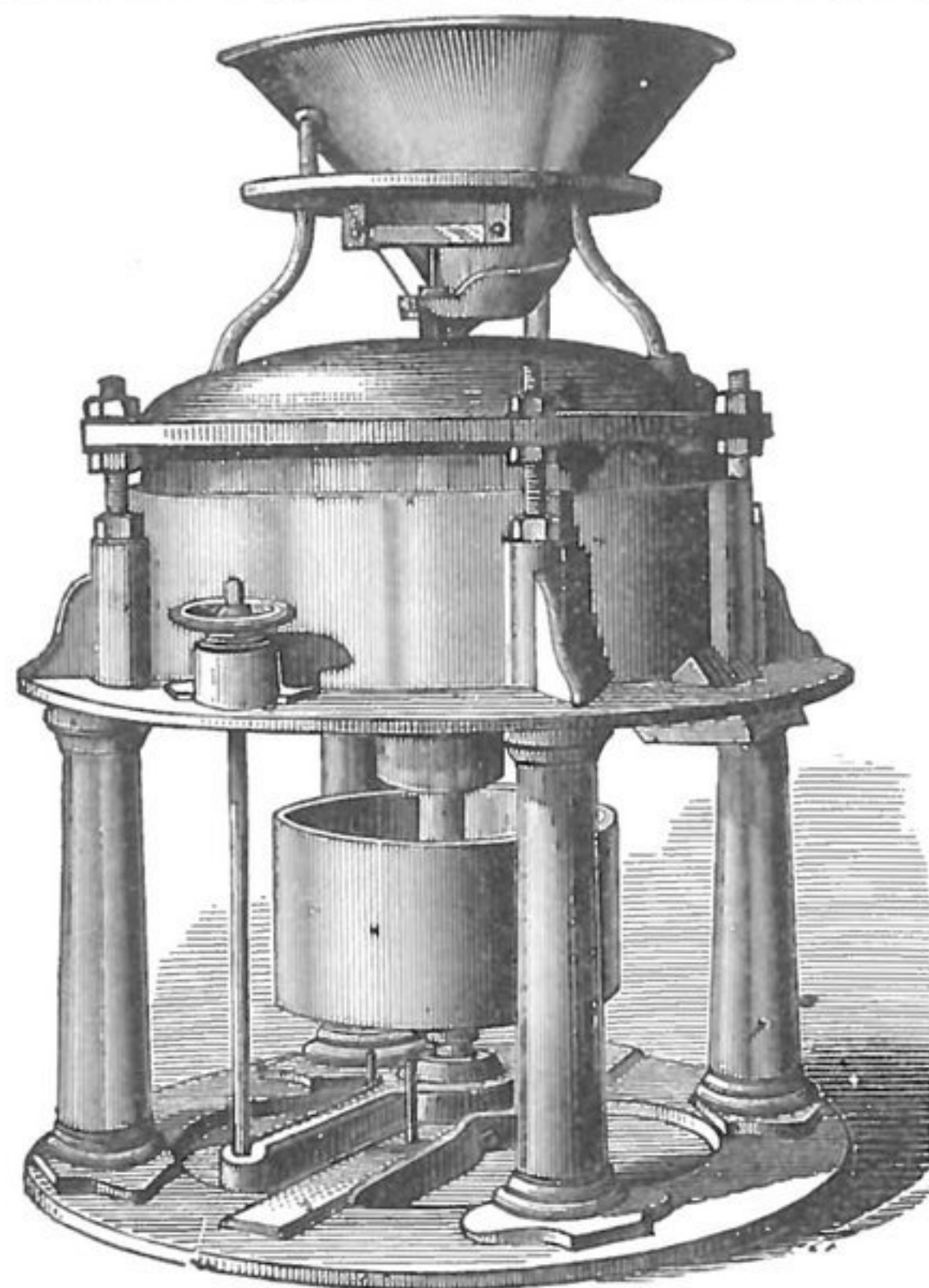
New York flour-dealers claim that Minneapolis millers are selling flour for direct exportation at 25 to 30 cents per barrel less than they can sell the same flour, hence the millers must have a special rate. Manufacturers are never able to undersell the middlemen and, if they were able to do so, would not, even to sell flour in a foreign market. It may be that the millers have a cut rate, but there are many other plausible reasons for their being able to undersell the New York dealers in foreign markets.—*Chicago "American Miller."*

The Washington (Pacific coast) winter wheat is being absorbed very slowly by Milwaukee millers, who find it useful only to mix moderately with home varieties. It contains very little gluten, but a large proportion of starch, they say, and bread made of its flour is less nutritious than the Californian product.—*Chicago "Daily Business."*

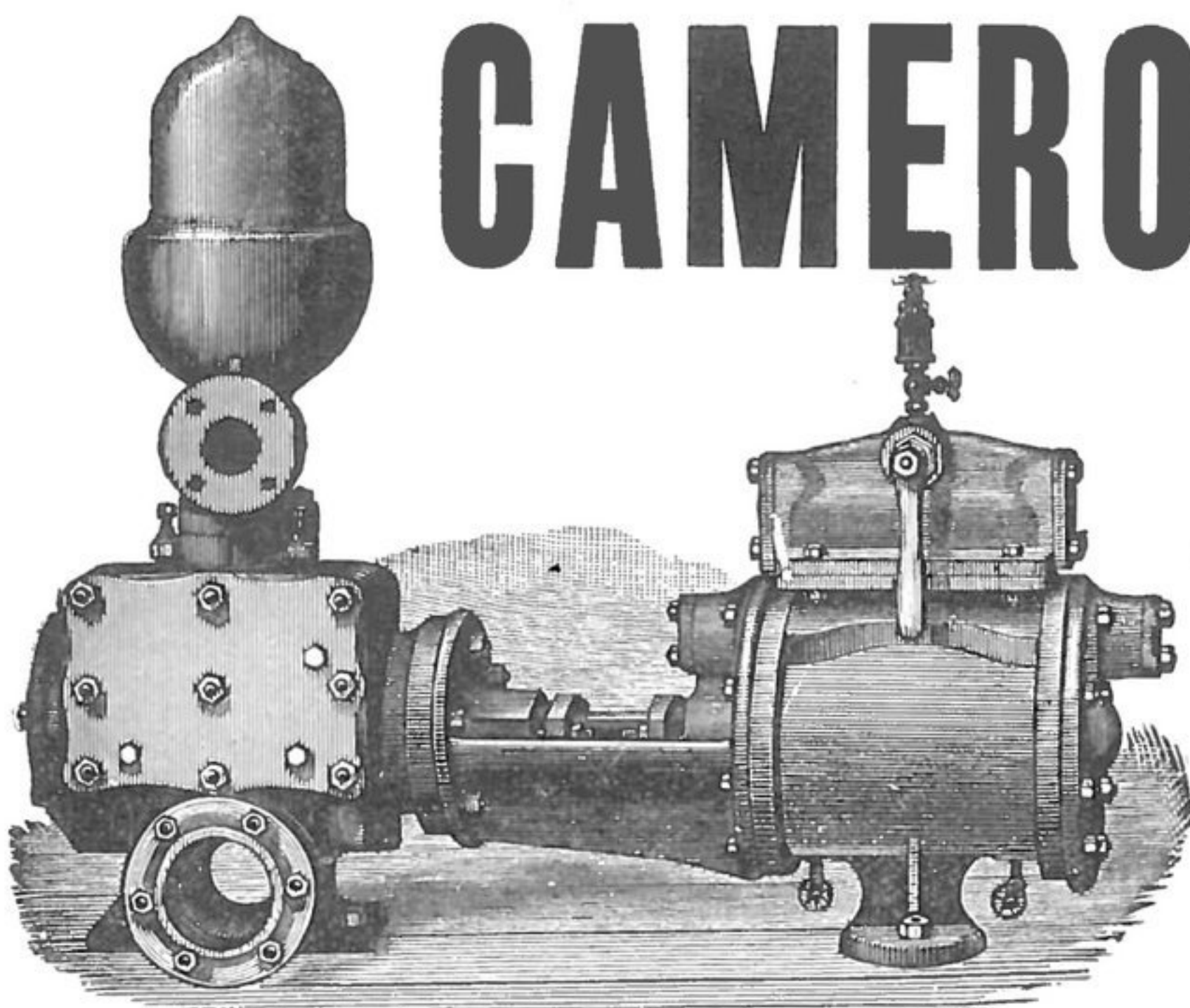
It has been estimated, from a microscopic examination of the word "Hello" on a phonograph cylinder, that it contains 16,000 indentations.—*New York "Mechanical News."*

SOUTHERN INDIANA MILLERS.

The Millers' Association of Southern Indiana met at the Sherwood House, Evansville, Ind., on Tuesday, December 16th, in their regular quarterly meeting. There was no business transacted in which the general public is interested. There was an informal talk about the present condition of the growing crop, and present and prospective prices for their product. The following millers were present: W. S. Lane, Decker; Alois Zillak, Haubstadt; David Wallace, Owensville; John Raab, Newburgh; August Ramsbrook, Huntingburg; J. F. Katterjohn, Boonville; W. J. Hargrave, Boonville, and Adam Miller.



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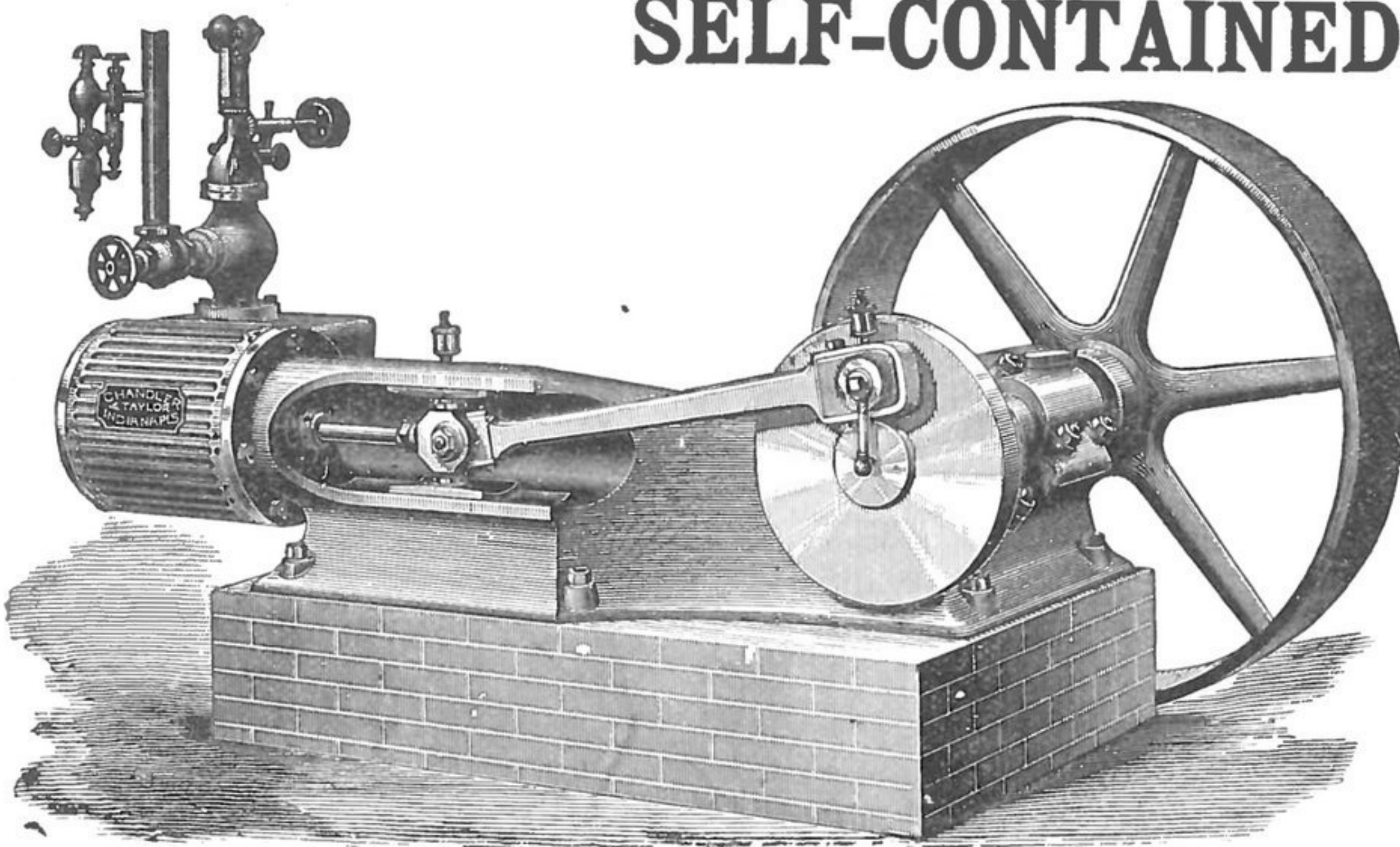
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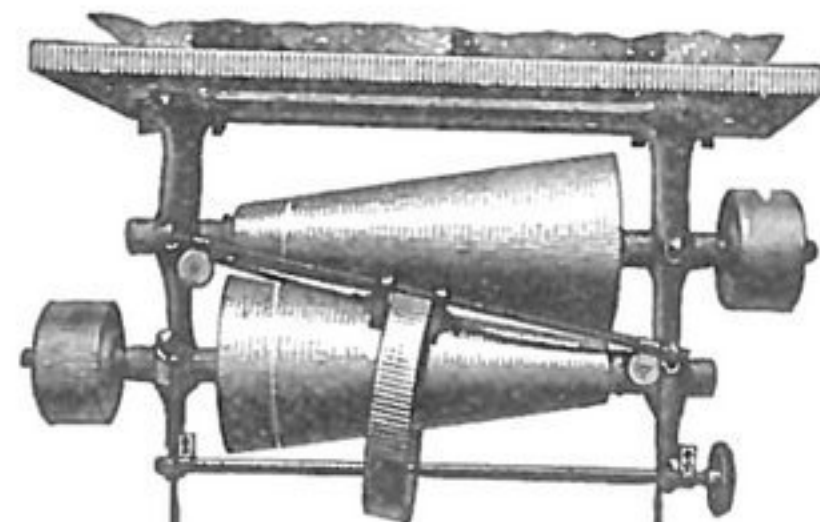
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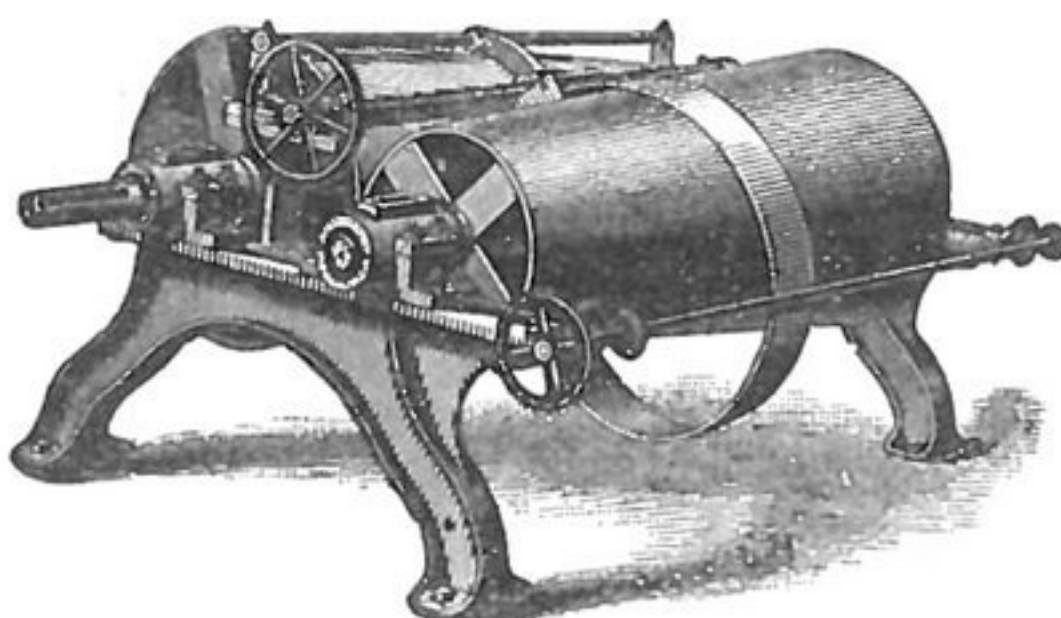
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OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., Dec. 20, 1890.

Saturday of last week was a day of irregular markets, opening easier on reports of failures in London, and closing better on improved financial outlook and shorts covering. In New York December wheat closed at \$1.05, January at \$1.05½, February at \$1.06¼, and March at \$1.07¾, with Atlantic port receipts 40,530, exports 19,259, and options 632,000 bushels. Manitoba spot No. 2 for export in New York brought 96¾c. delivered. The wheat reports generally were bullish in tone, and millers asserted that all the wheat east of the Rockies is not enough to keep the mills running until next July. December corn closed at 63c., with receipts 84,203, exports 87,566, and options 152,000 bushels. The first carload of new crop was received in New York and graded No. 2. December oats closed at 49½c., with receipts 86,295, exports 16,376, and options 25,000 bushels. Wheat flour was firm and in good demand at the improved prices. Receipts were 13,428 sacks and 21,434 barrels, and exports 22,130 sacks and 7,677 barrels. The minor lines were generally better.

Monday brought a dull, unsettled wheat market on the silver and visible supply situation. December closed at \$1.03½ with receipts 62,393, exports 7,398, and options 1,856,000 bushels. St. Louis took larger amounts of Kansas wheat. Cash business was very small. December corn closed at 61¼c., with receipts 115,458, exports 32,553, and options 856,000 bushels. December oats closed at 48¾c., with receipts 105,073, exports 29,839, and options 365,000 bushels. Wheat flour was held at 5@10c. higher on shipping or low brands, which checked business. Receipts were 19,484 sacks and 26,521 barrels, and exports 8,448 sacks and 7,865 barrels. The minor lines were featureless. The visible supply in the United States and Canada:

	1890. Dec. 13.	1889. Dec. 14.	1888. Dec. 15.
Wheat	25,186,150	33,944,742	37,213,538
Corn	1,820,469	5,269,283	6,327,430
Oats	3,390,781	4,827,318	8,010,025
Rye	474,487	1,212,326	1,613,641
Barley	4,344,619	2,583,794	2,424,498

Tuesday brought dull, irregular and generally lower markets. December wheat closed at \$1.03¾, with receipts 97,372, exports 7,601, and options 1,152,000 bushels. December corn closed at 62c., with receipts 125,968, exports 42,177, and options 1,120,000 bushels. December oats closed at 48½c., with receipts 110,659, exports 4,868, and options 440,000 bushels. Wheat flour was "dead as a coffin nail." Prices were not materially changed in quotations, but buyers only nibbled. Receipts were 15,914 sacks and 32,151 barrels, and exports 7,281 sacks and 9,163 barrels. The other lines were featureless throughout the day.

The following shows the amount of wheat and flour, together with the amount of corn, on passage to United Kingdom, for ports of call or direct ports for the weeks mentioned:

	1890. Dec. 16.	1890. Dec. 9.	1889. Dec. 17.
Wh. & flour, qrs.	2,302,000	2,324,000	2,039,000
Corn, qrs.	519,000	460,000	400,000

The following shows the amount of wheat and corn on passage to the Continent for the past week, the previous week, and for the same week last year:

	1890. Dec. 17.	1890. Dec. 9.	1889. Dec. 17.
Wheat, qrs.	747,000	665,000	366,000
Corn, qrs.	121,000	133,000	205,000
India wheat to United Kingdom	Qrs. 50,000		
India wheat to Continent	35,000		

The imports into the United Kingdom for the past week and the previous week and for same week last year:

	1890. Dec. 16.	1890. Dec. 9.	1889. Dec. 17.
Wheat, qrs.	263,000	273,000	184,000
Corn, qrs.	31,000	107,000	107,000
Flour bbls.	101,000	132,000	192,000

Wednesday brought a general break at opening in the cereal markets, with a higher closing on covering of shorts, who were "run in" by Hutchinson in Chicago. December wheat closed in New York at \$1.04½, January at \$1.05, February at \$1.05½, March at \$1.06½, and May at \$1.06¾. Receipts were 24,875, exports were 35,401, and options 816,000 bushels. December corn closed at 62c. January at 61¼c., February at 61½c., and May at 60¾c. Receipts were 126,718, exports 59,768, and options 760,000 bushels. December oats closed at 49¾c., January at 49¾c., and May at 51¼c. Buckwheat grain was nominally 58@59c. on track. Rye grain was dull and nominally unchanged and neglected. Quotations: State 78@80c.; Western 77@80c.; 73@74c. for Canada in full loads afloat, with car lots 2@3c. less. Barley was dull and neglected at old prices asked. Quotations: No. 1 Canada 95c. nominal; No. 2 do. 87c. nominal; extra No. 2 do. 90c. asked; No. 2 Milwaukee 80@82c.; ungraded Western 75@86c.; State nominal. Malt was dull and nominally unchanged. Millfeed was dull and steady at old prices, with mills generally sold and trade supplied ahead. Quotations: 40, 60 and 80-lbs at \$1.05; 100-lbs and sharps at \$1.20, and rye at \$1.05@1.10.

Wheat flour was stagnant. Buyers in New York were hauled around by holders and compelled to examine samples which they would not buy, and to watch the making and pulling of dough, until they were willing to die. The holders, while forcing buyers to do all this, did not offer concessions to force sales. Receipts were 12,007 sacks and 20,574 barrels, and exports 4,334 sacks and 5,058 barrels. Sales during the day included the following: Sacks ungraded spring to arrive for export at \$3.05; No. 2 winter, in barrels, at \$4 for fancy; spring patents, \$5.25 for standard brands; choice, \$5.35; fancy, \$5.50 bid in car lots occasionally; rye mixtures at \$4.55 for choice old; fancy patent spring at \$5.65; winter patent at \$5 for a fair grade; winter clear at \$4.65 for a fair flour; sacks Minnesota bakers' at \$4; winter straights at \$4.85@4.90 and fancy held at \$5; No. 2 extra winter at \$3.90 in barrels for choice; Southern in barrels at \$3.25 on the dock; city mills for forward delivery were sold by one mill at \$5.25 and by another mill at \$5.15 in lines, and in lots at \$5.15@5.25; also city mills patents at \$5.40@5.65, chiefly \$5.40@5.60; spring patents at \$5.15@5.35 for good to choice; at \$5.40@5.50 for fancy; winter patents in lots at \$5@5.15; fancy held at \$5.25; winter superfine at \$3.40@3.75, the latter extreme; fine winter in car lots at \$3.05@3.25; fancy small lot \$5.40.

Rye flour was advanced by millers to \$4.50, on the strength in rye and on light supplies of both grain and flour. The range was \$4.25@4.40 for ordinary to standard brands. Buckwheat flour was steady and active at \$2.17@2.25. Corn products were more active at the following quotations: Barrels Sagamore and Brandywine at \$3.25, and the market was firm at that price; coarse city \$1.20@1.24; fine yellow \$1.30@1.34; fine white \$1.35@1.40; Southern \$1.10@1.65 for coarse to granulated; chops \$1.15@1.20; brewers' malt \$1.50@1.55.

Thursday was a day of all-round flatness and stagnation in cereals, on account of the financial situation. Reported failures in various lines and a renewed money stringency caused the weakness. December wheat closed at \$1.04½ January at \$1.04½, February at \$1.05½, and May \$1.06½, with receipts 7,330, exports, 100,210, and options 1,288,000 bushels. December corn closed at 62¼c., with receipts 103,680, exports 33,078 and options 768,000 bushels. December oats closed at 49¾c., with receipts 93,602, exports 11,310, and options 225,000 bushels. Wheat flour was dull and easy on trade brands, especially spring patents, which could be bought

in round lots at \$1.10@1.15 for standard and at \$5.20@5.25 for 500 and 1,000 barrel lots do. and at \$5.25@5.40 for round lots fancy and at \$5.35@5.50 in small lines; while bakers' extras in sacks were strong at \$3.90@4.00 in sacks, with pretty free sales for the United Kingdom, notwithstanding shippers report dull cables and easy markets. Otherwise market dull, as city mills were slow again. Exporters reported few orders, and agents in New York of Western mills said their people were doing very little new through business direct. Winter straights sold in a line at \$4.35; choice spring straights at \$5, patent springs at \$5.35 for choice and \$5.25 for standard. City mills in small lots sold at \$5.10@5.25; 300 fair rye mixtures at \$4.25; choice held at \$4.35@4.40; but there were some common No. 1, not as good as bakers' extras of the shipping standard, that were offered at \$4 and not wanted, while standards were selling at \$4.25 and choice at even more; No. 1 and clear winter at \$4.50@4.65; straight winters at \$4.75 for fair, or equal to a choice clear, and 400 bakers' extra at \$4.25@4.35; common rye mixtures at \$4 in barrels; winter straights at \$5 for fancy; no-grade spring at \$2.35 in sacks; bakers' extras at \$4 for common, of which more were offered than wanted, and they were not properly anything but a very poor No. 1 from damaged wheat, or what is left after 80 per cent. patents had been taken out. City mills were slow again with sacks bakers' extras at \$4, freight to London on 12s 6d basis; city mills at \$5.15@5.25 in small lots; choice winter straights at \$4.95; No. 2 at \$3.65@3.90 in sacks and barrels. The minor lines were generally featureless.

BUFFALO MARKETS.

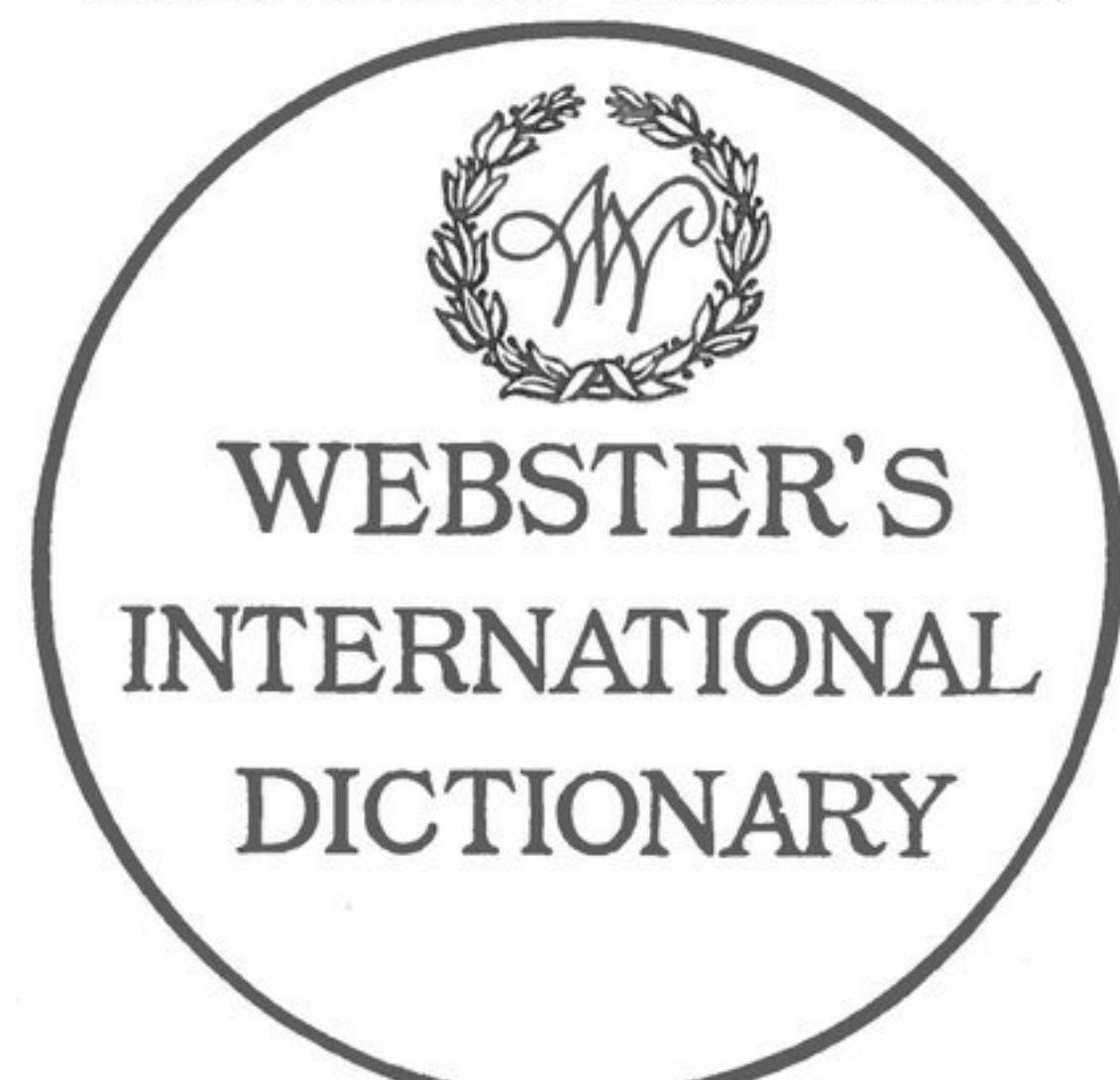
BUFFALO, N. Y., December 20, 1890. Business here is only moderate. Wheat fluctuations checked trade. Late sales were made at the following prices: WHEAT, No. 1 Northern at \$1.04½, do. at \$1.04, at \$1.03½, at \$1.03¾, at \$1.03½, at \$1.03; No. 2 Northern at 96c.; extra No. 3 red at \$1; No. 1 white Oregon at 95c., and No. 2 white Oregon at 93c. CORN—Sales were made and the market closed steady at 59½c. for No. 2 yellow in store, 56¼@56½c. for No. 3 yellow, 59c. for old No. 2 corn in store, and 58c. for new do. and 55¼@56c. for No. 3 corn. OATS—The market is barely steady at 49c. for No. 2 white, 47¼@48c. for No. 3 white, and 47¼@48c. for No. 2 mixed. There are very few No. 2 mixed here. BARLEY—Choice Michigan sells at 78@80c., fair to good at 75@78c. No. 2 Western at 75@77c. and No. 3 do at 70@74c. No Canada barley is offered to a quotable extent. RYE—No. 2, is quotable at 75c. OATMEAL—Akron, \$7.20; Western, \$6.95 per bbl; rolled oats, in cases, 72 lbs, \$3.85. CORNMEAL—Coarse, \$1.15@1.20; fine, \$1.20@1.25; granulated \$1.75 per cwt. MILL-FEED—City-ground coarse winter, \$19.00@20.00 per ton; fine do, \$19.50; finished winter middlings \$22.00@23.00; coarse spring do, \$22.00.

FLOUR MARKET.

Spring Wheat.	Winter Wheat.
Patents	\$6.25@6.50
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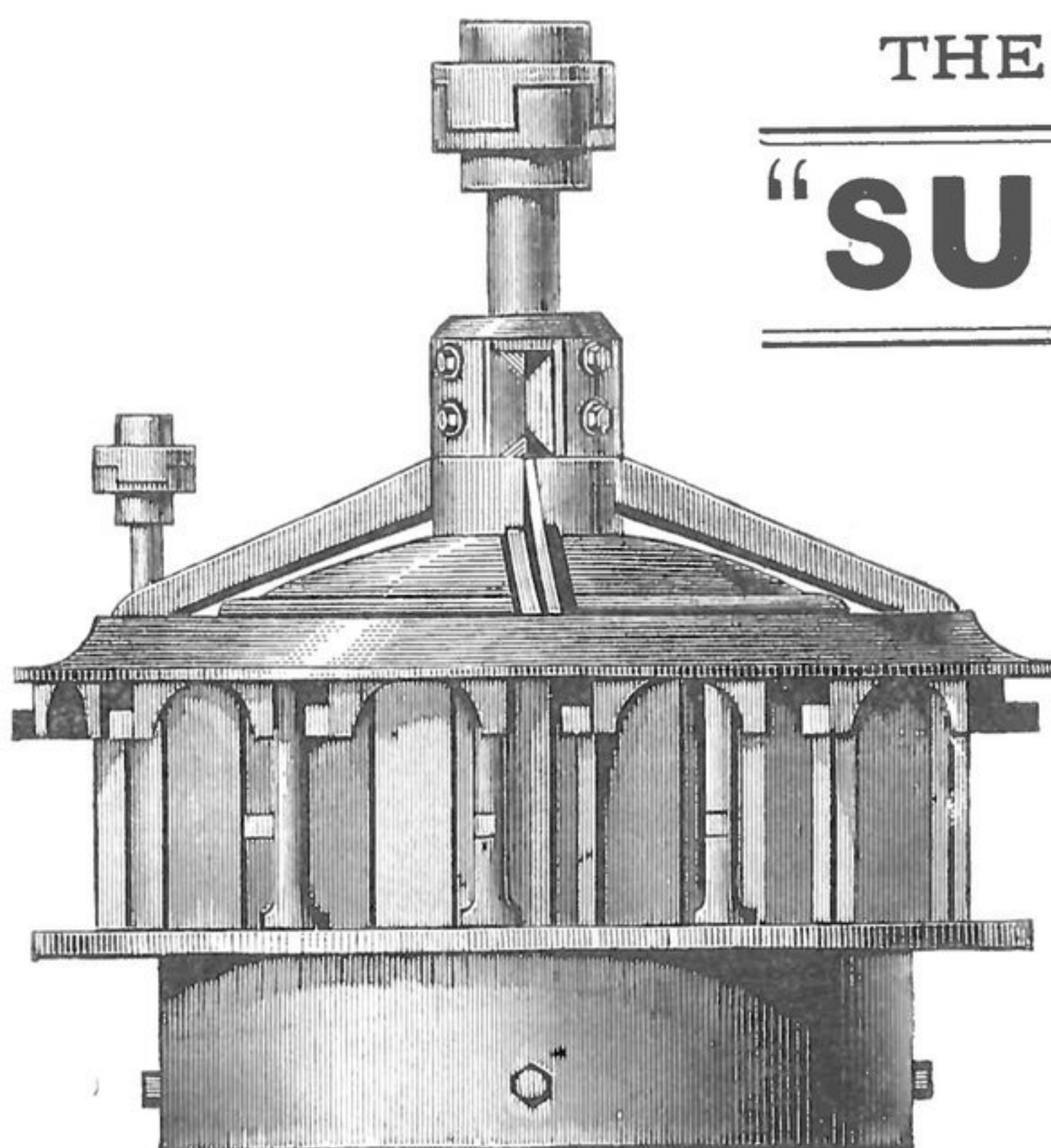
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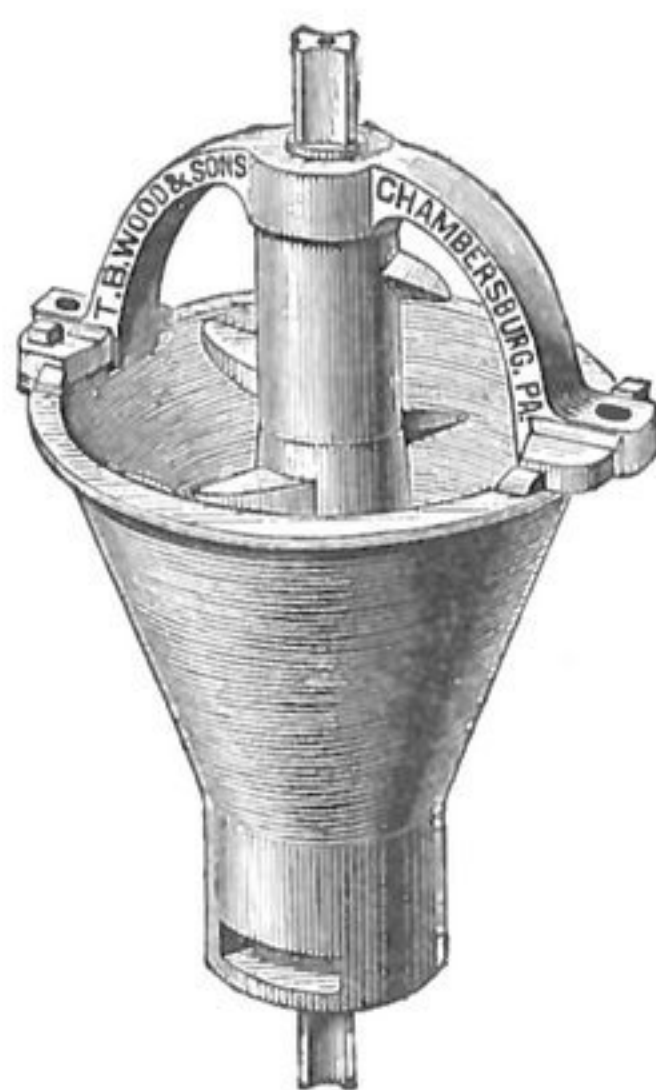
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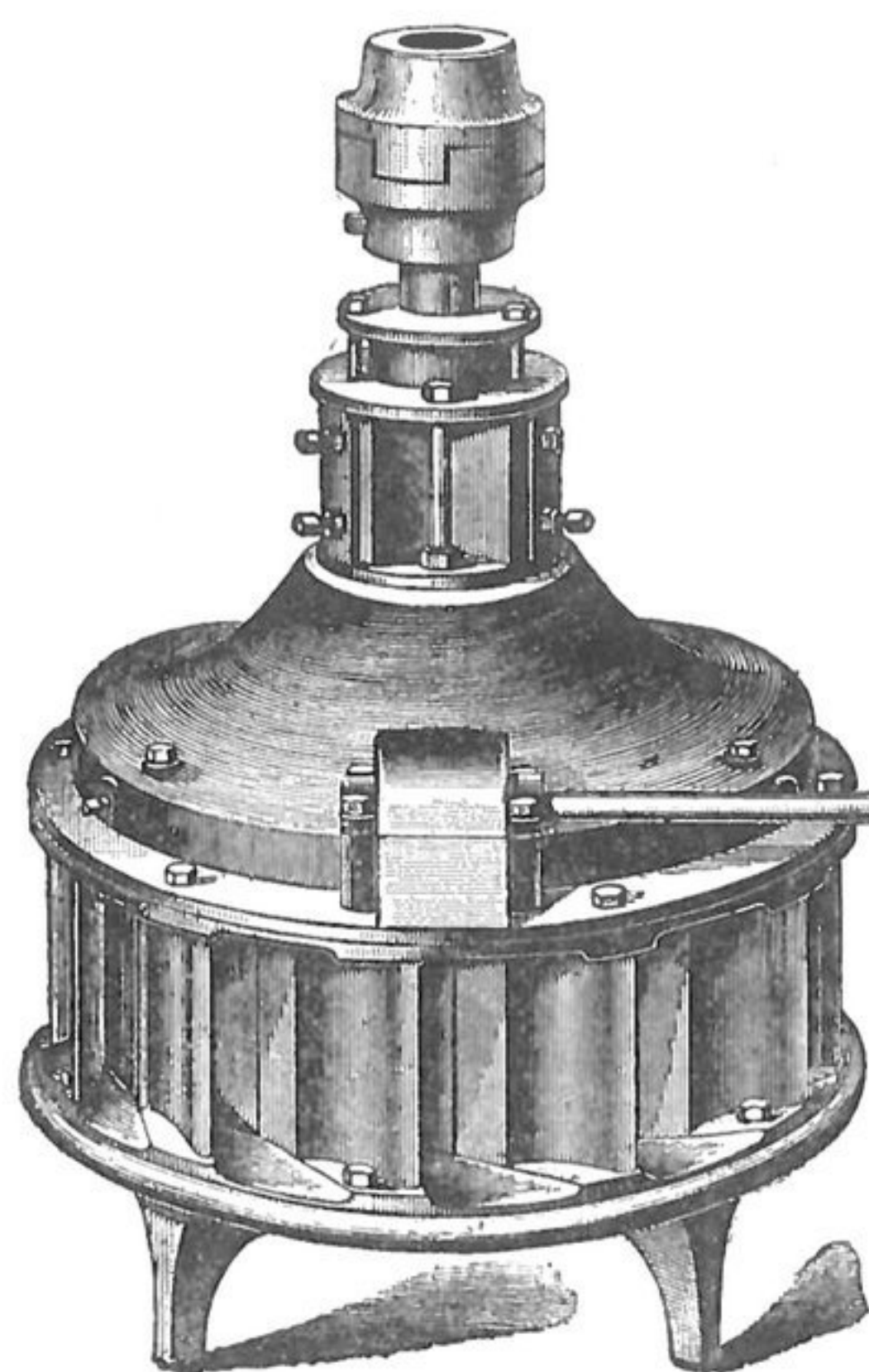


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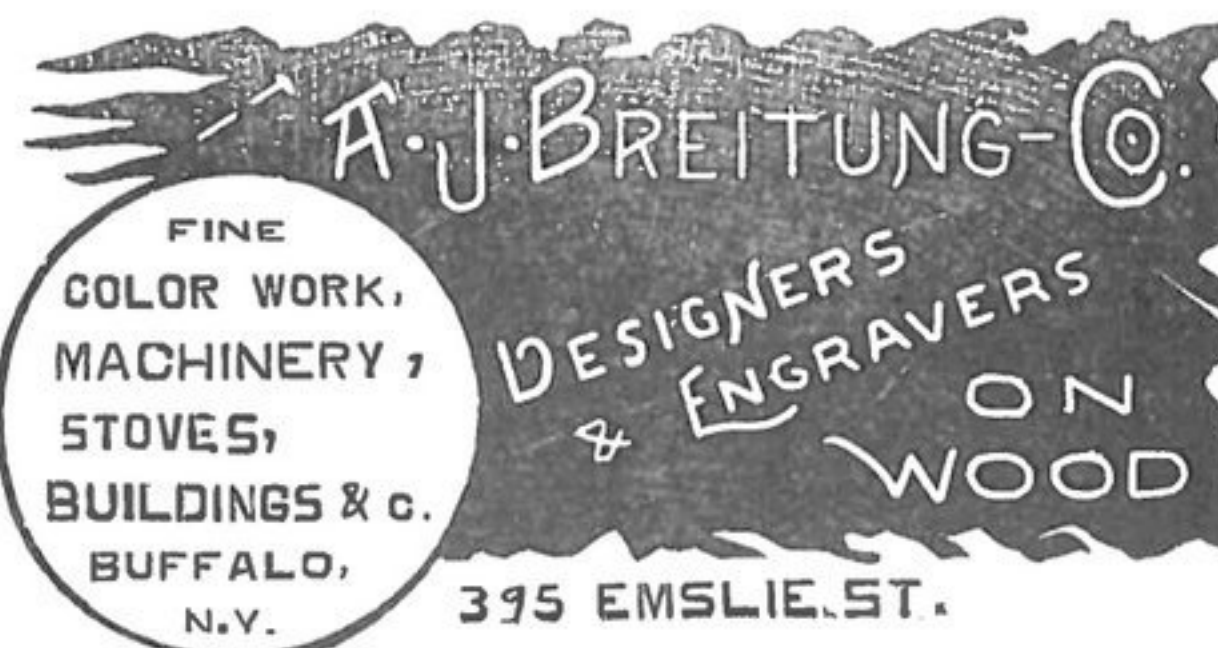
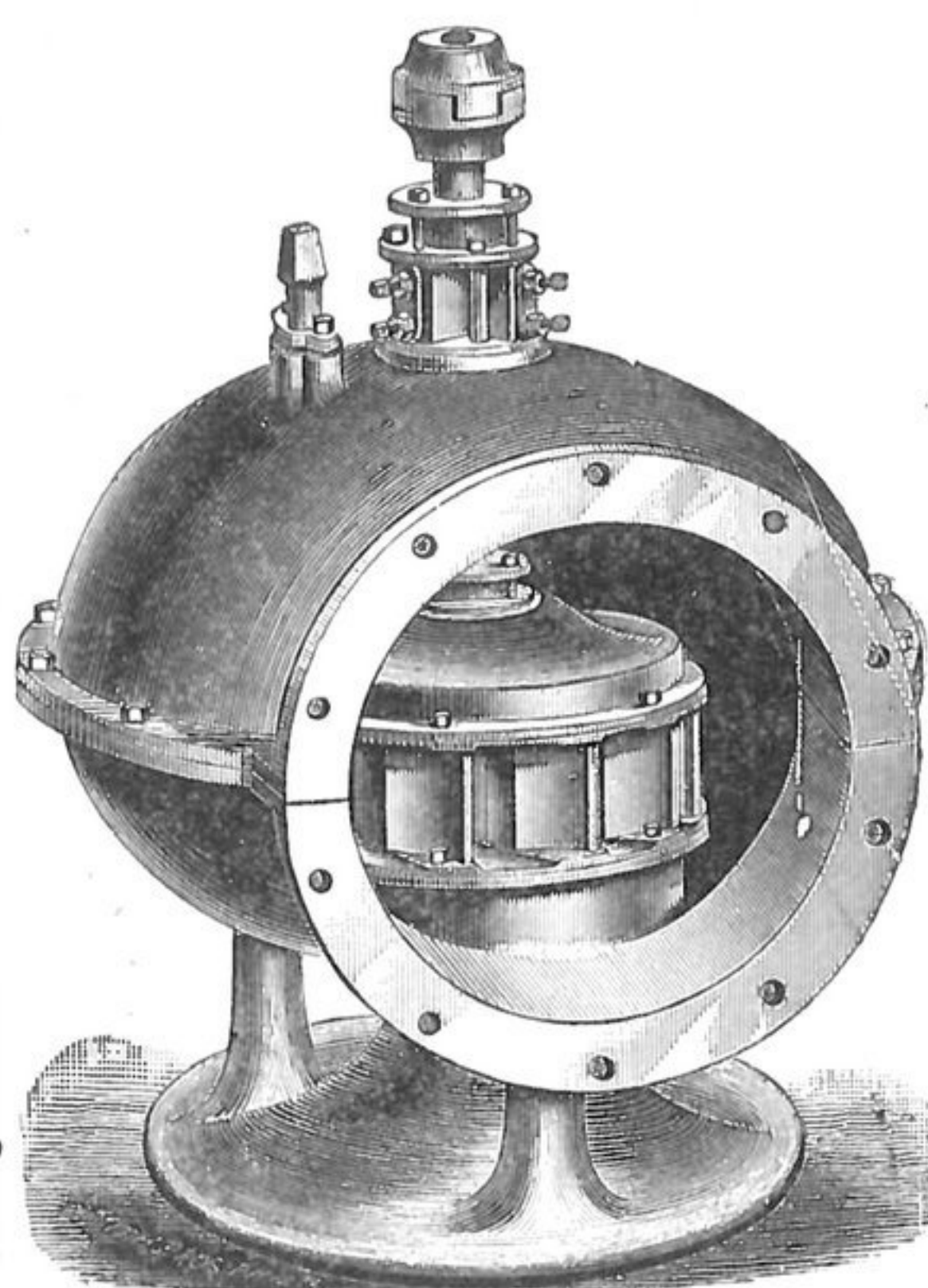
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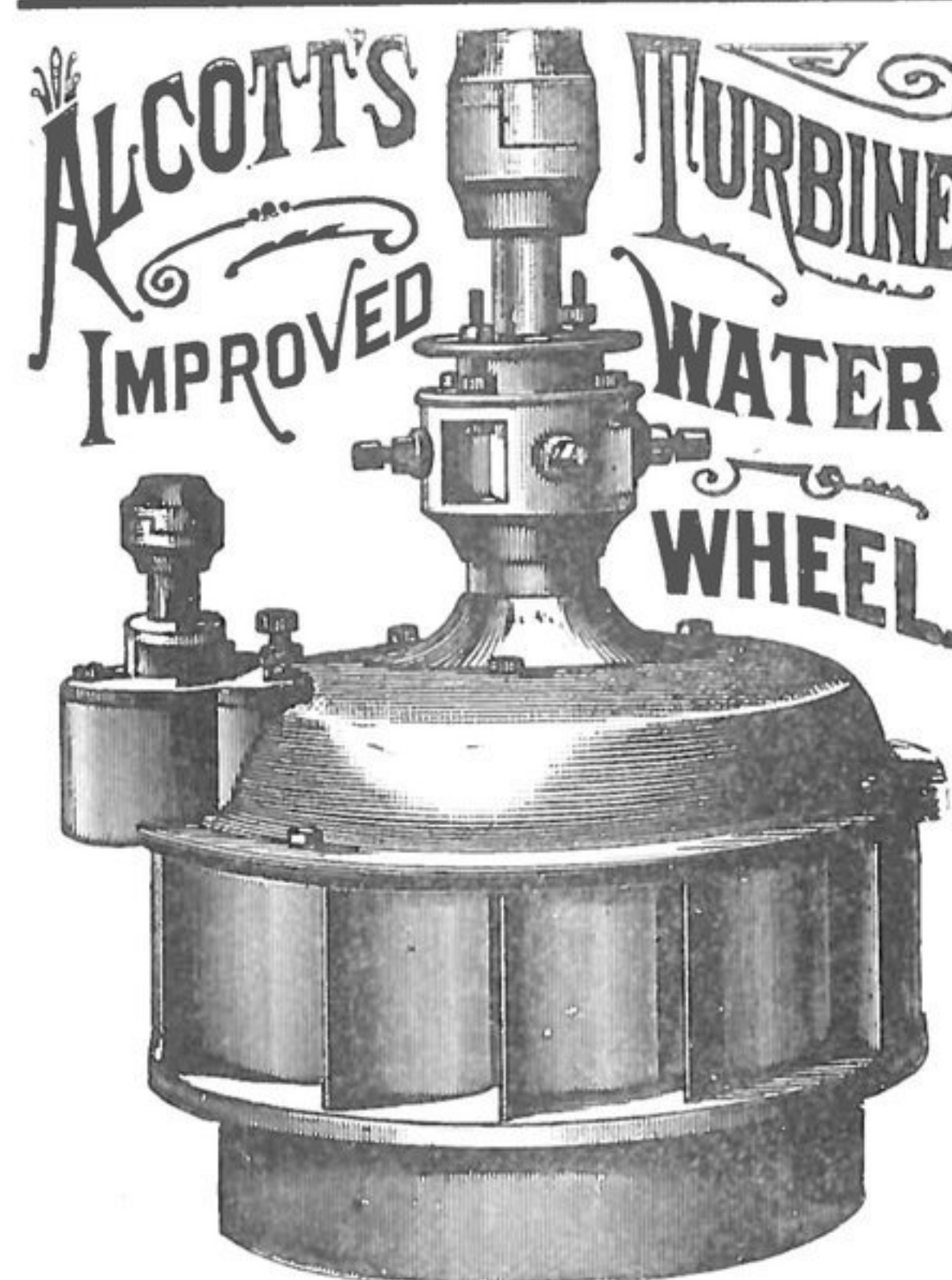
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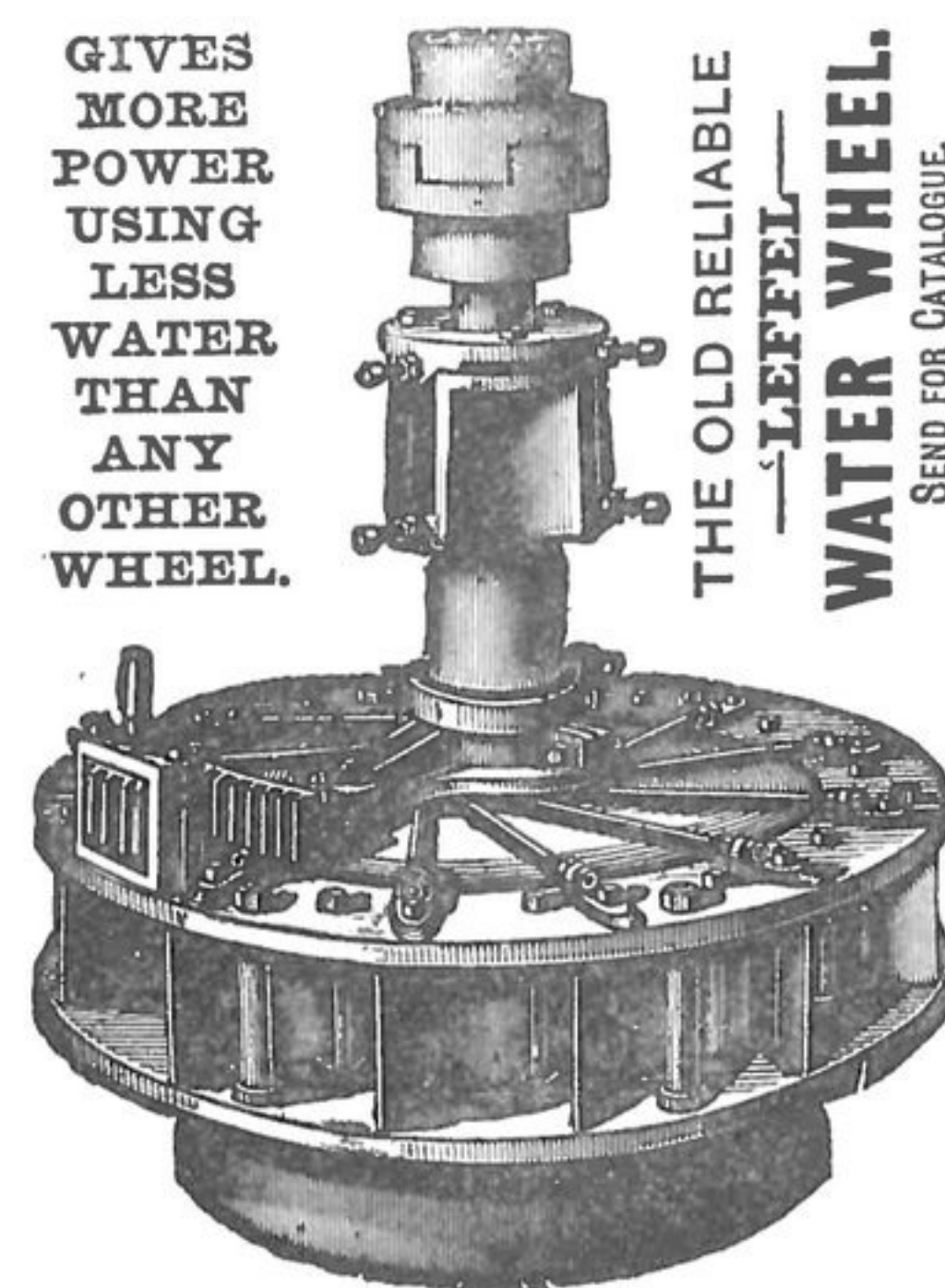
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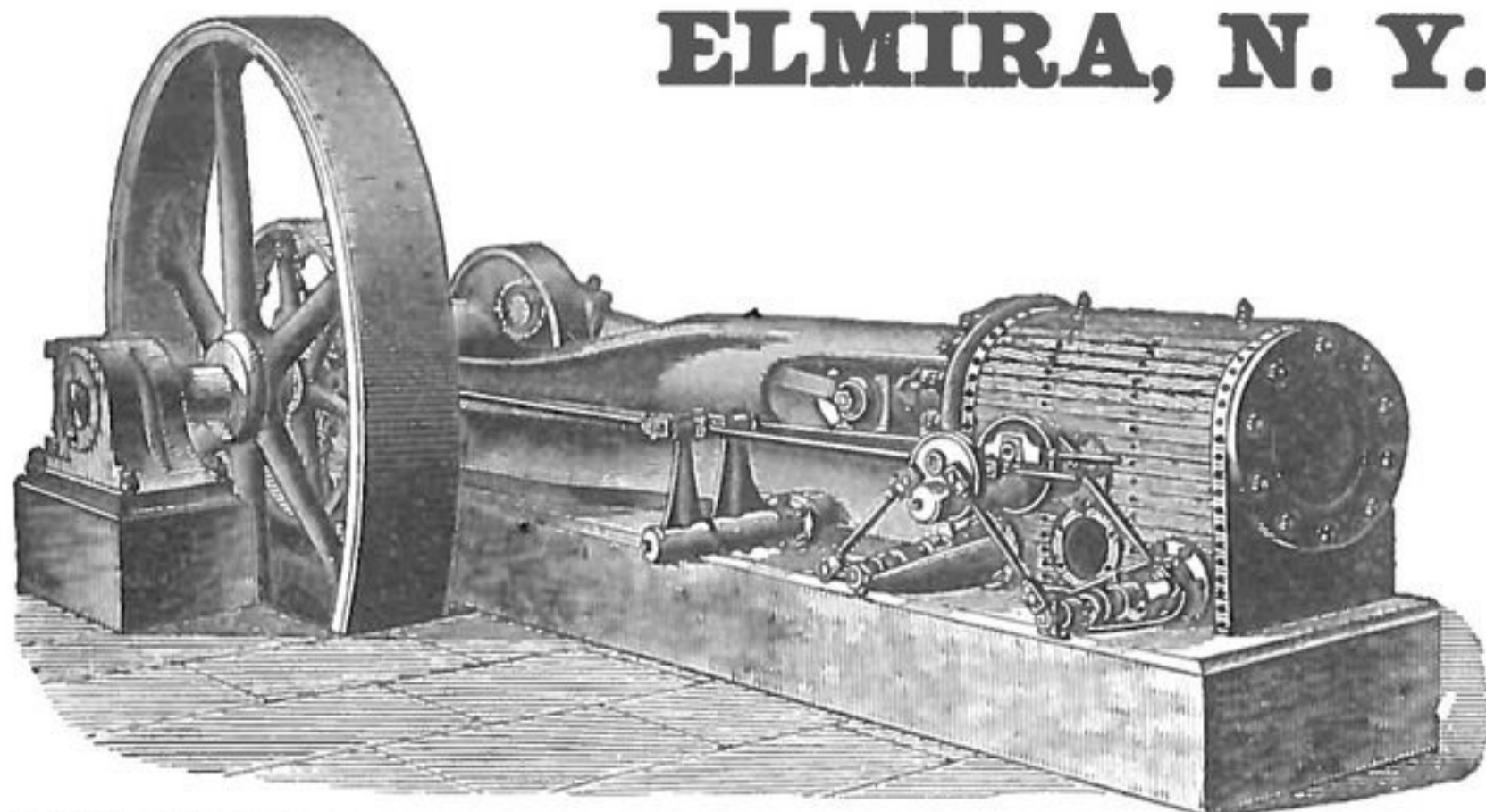
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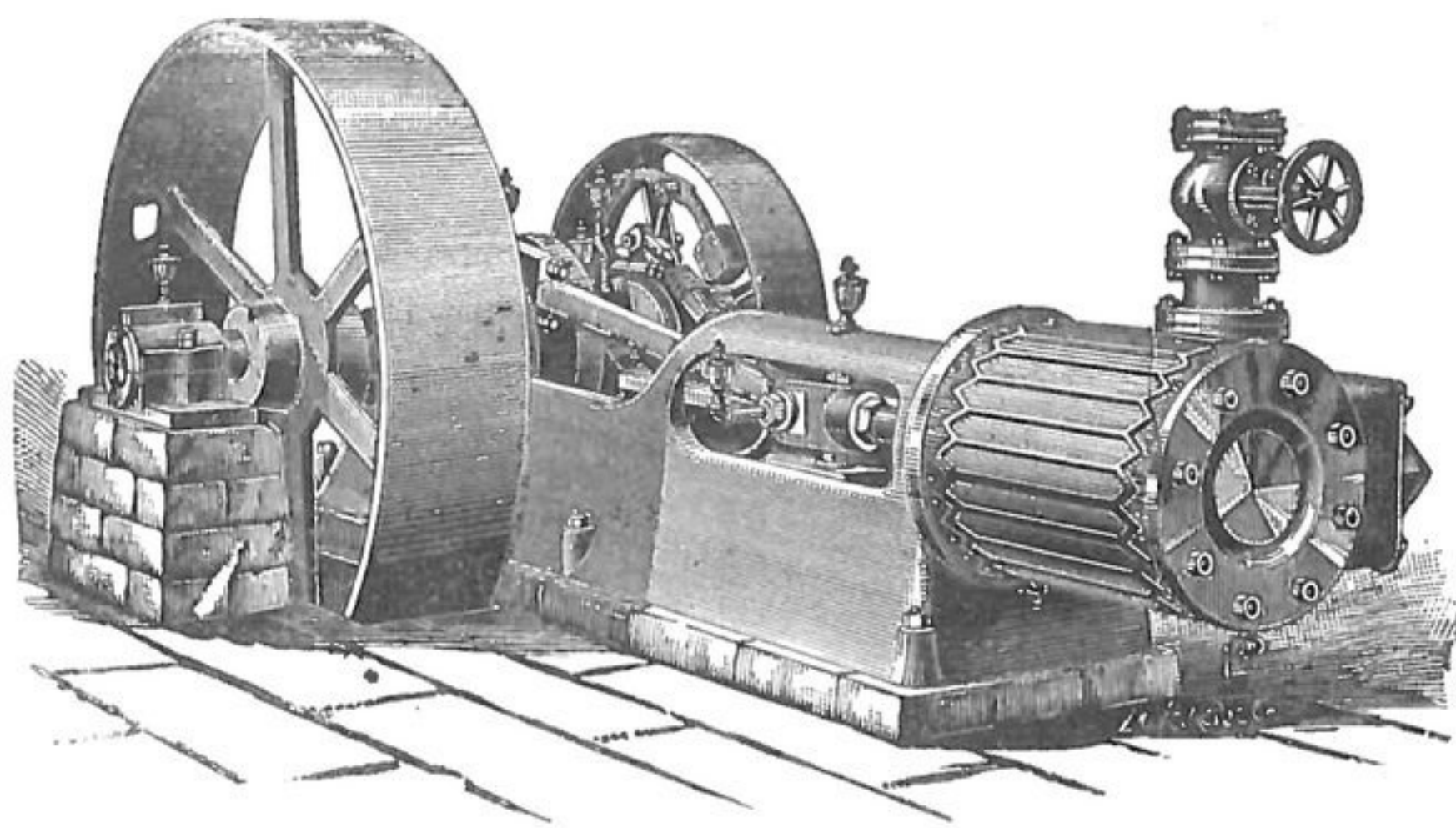
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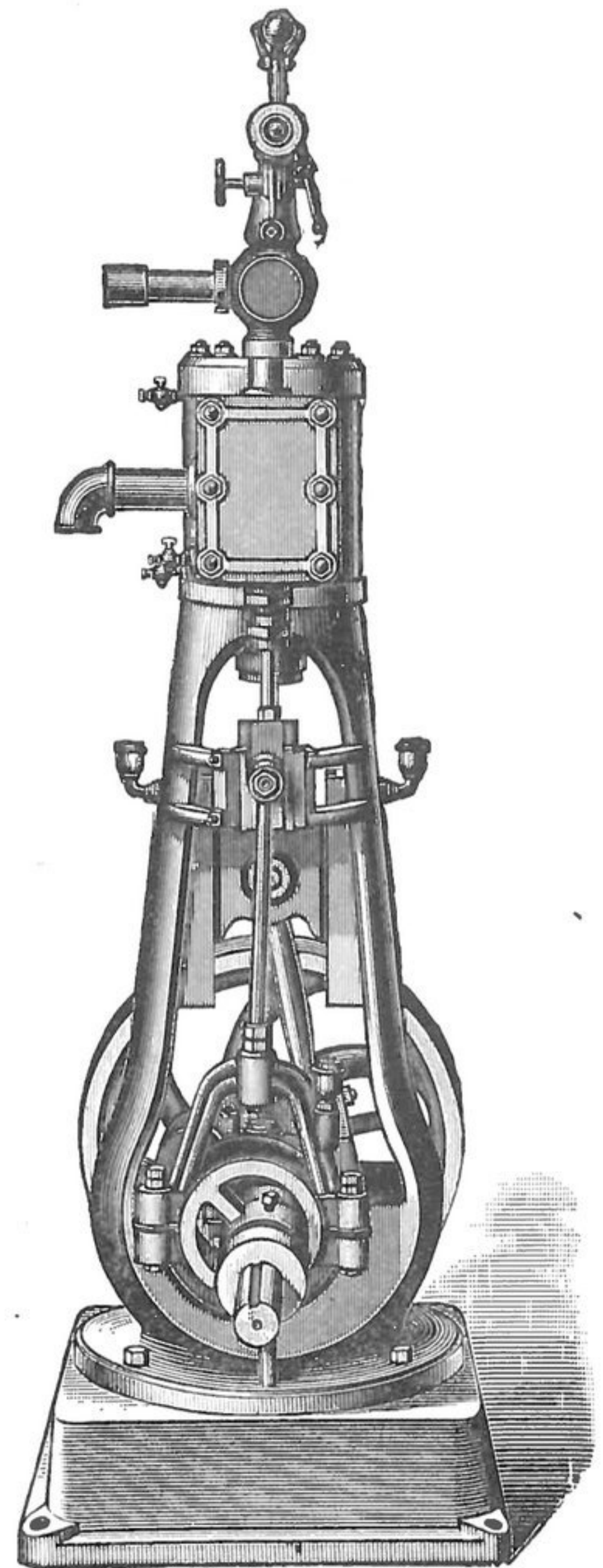
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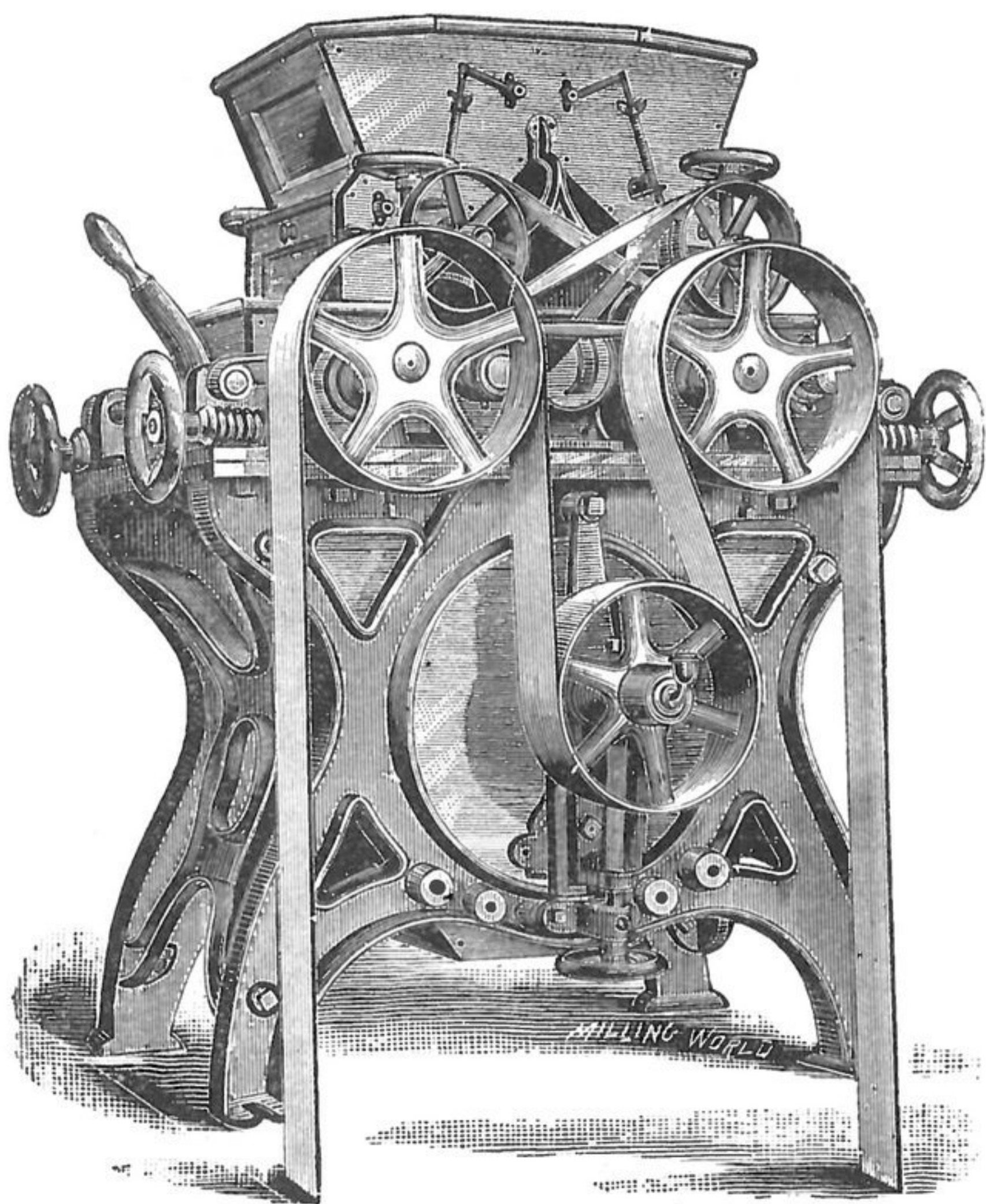
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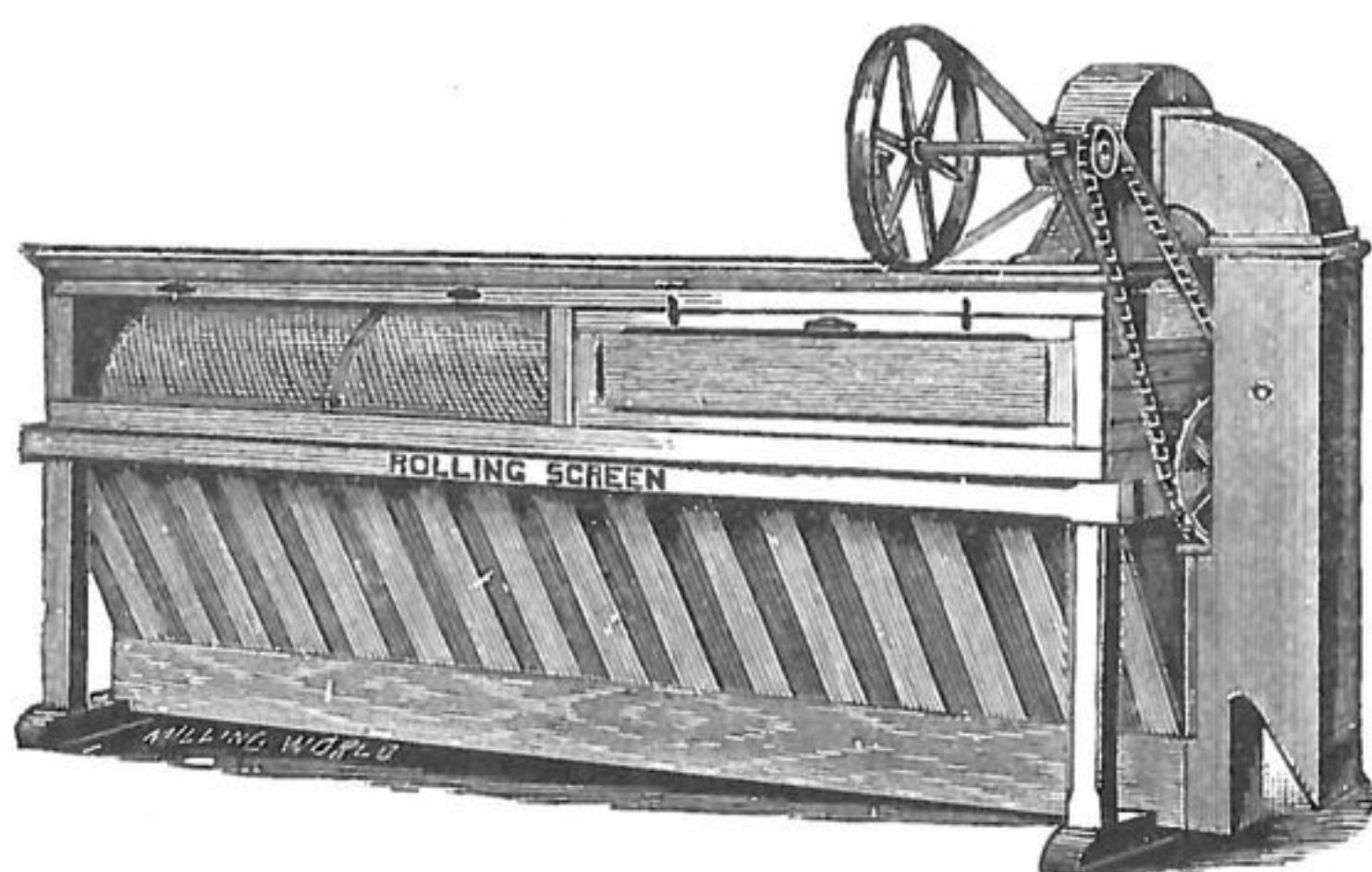
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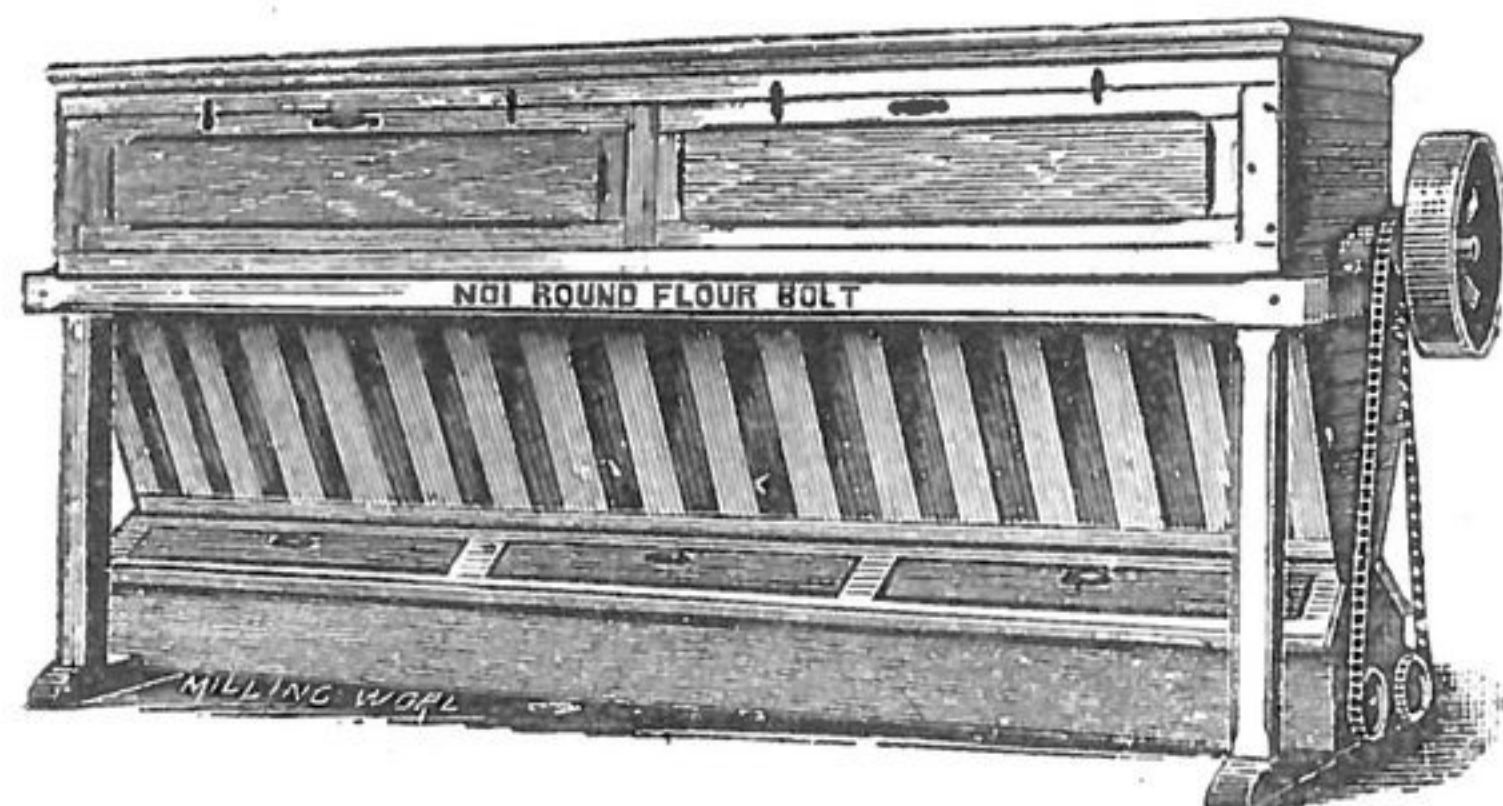
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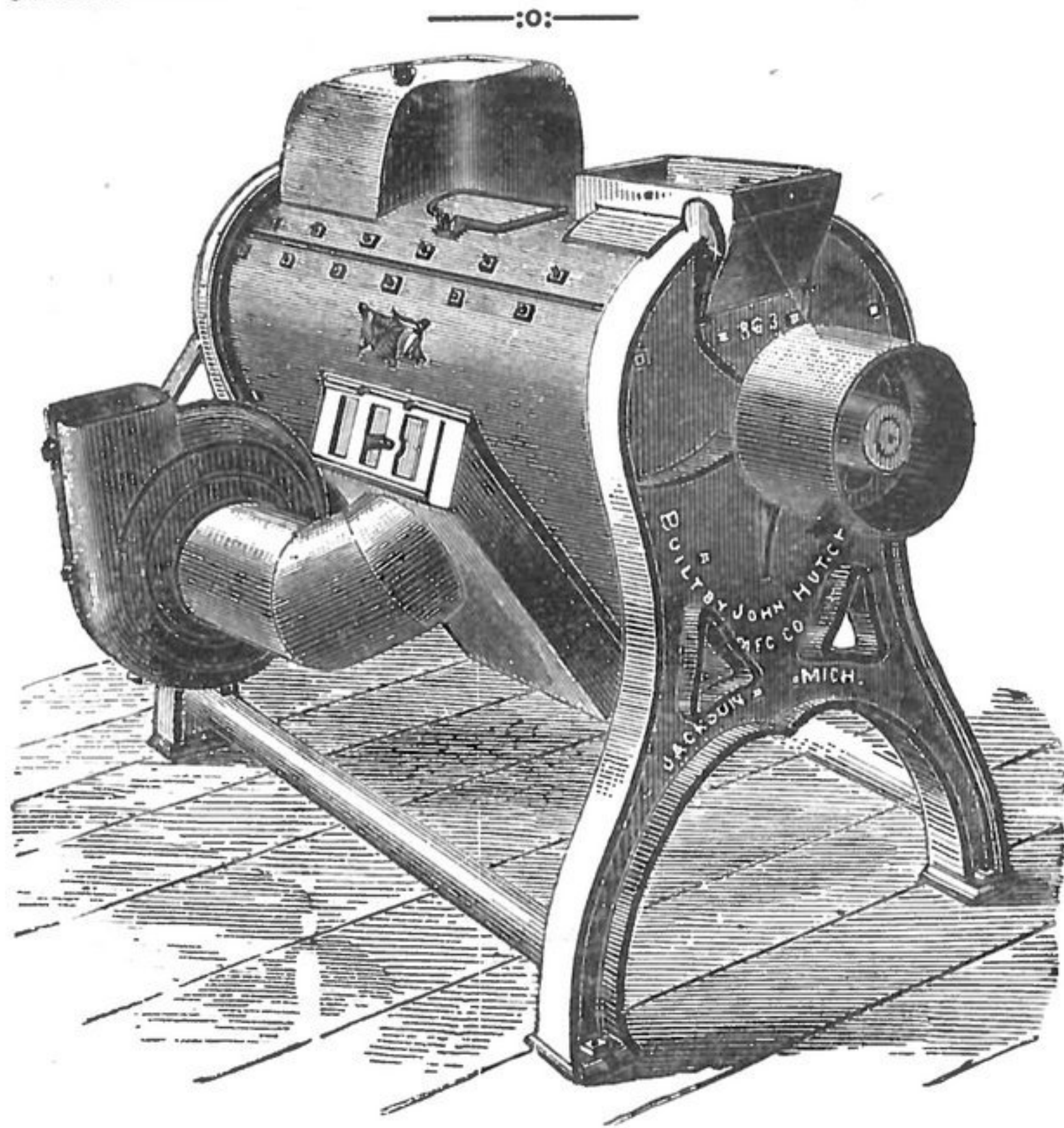


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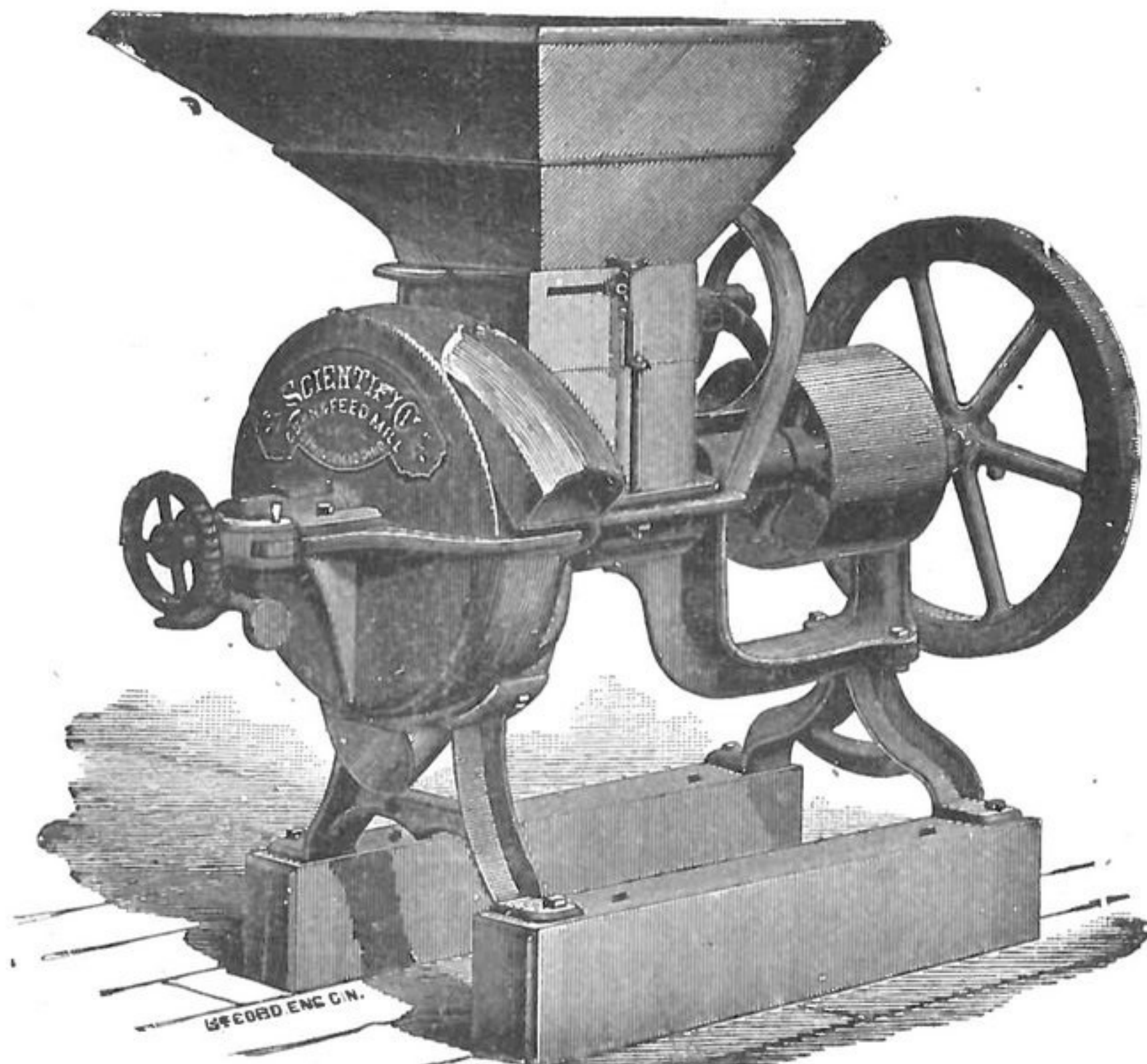
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